No. 30

5800 to 6155

Field Book

of

Willis L. Jepson

—·· —

If lost finder please return to W.L. Jepson, Department of Botany, University of California, and receive reward.

—·· —

1914.

Berkeley,
University of California

Berkeley, Apr. 1914

– Herr Jahn, a German gardener, comes to call with a card of introd. from the Lexaners at Santa Barbara. He worked for Dr. Franceschi a little and says F. made a great success of germinating Lycopodium in sawdust. F. was a well-to-do man who spent lavishly of his means on his mania of new introductions. The financial returns were inadequate, so says Jahn

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– Pringle, C.G. U.S. vs. Pringle. cf. Atlantic, Feb. 1913 (111:145).

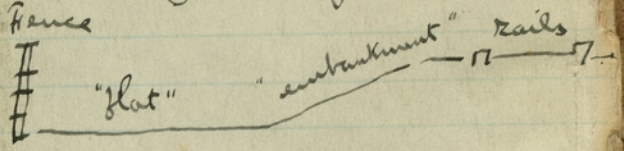
– Greene, E.L. Dinner on 70th birthday, full account in Science, ns. 39:109.

Sonoma Valley
near Eldredge 1150 ft.

No. 5800. Eschscholtzia californica.

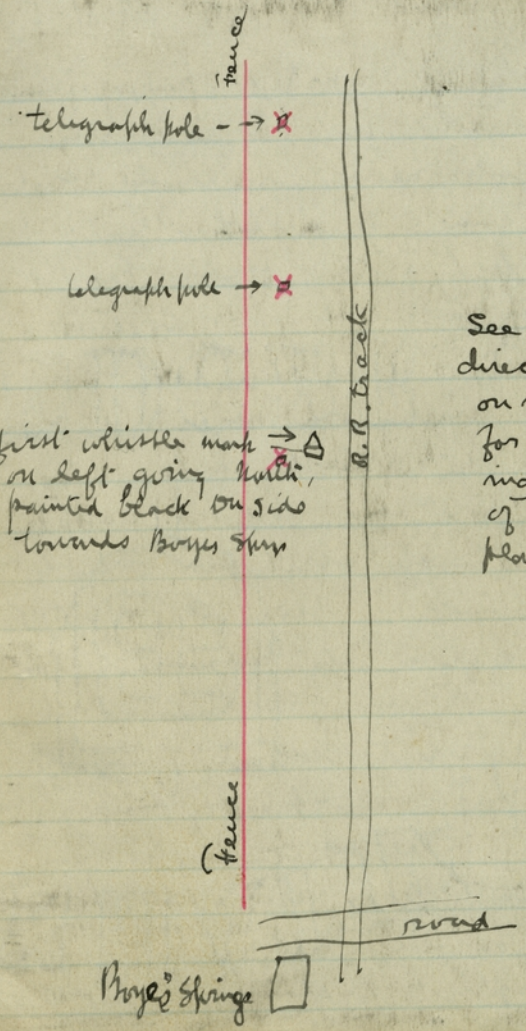
Gathered and marked as per diagram.

The plants marked were all on the "flat" between the fence along right of way on west side of track and the low sloping embankment gently graded up to railway itself.



The embankment is exaggerated.

The top board of the fence was notched opposite the marked plant. If more than one plant marked in a cluster then the notch ran clear across top of board.


fence
telegraph pole
telegraph pole
first whistle mark on left going South, painted black on side towards Boyes Spgs
R.R. track
See specific directions on next page for refinding stations of marked plants.
fence
road
Boyes Springs

Sonoma Valley

175 ft.

To refind marked poppy plants: Go north from Boyé's Springs station along railroad track. One comes to a whistle mark on left (west-) side of track painted black on side towards Boyé's Spr. Sta. There is a telegraph pole very near this mark but nearer the station than the whistle mark. The first pole, then, beyond (north) the whistle mark is a finder. Nearly halfway from this pole to second pole the markings begin and continue north a little way beyond second pole. The plants were marked by wire through the root crowns run out to iron spikes driven in ground. Marks on fence, always on top board, correspond to plants as per page 2 note.

No. 5801. Lupinus nanus (Dougl. var. apricus C.P.Sm.) typical as to color, i.e. usual to sp. (L. nanus Dougl. Det. also by C.P.Sm.)

No. 5802. Lupinus nucranthus (Det. W.L.J.) typical color i.e. usual to sp. (bicolor Dougl. not L.) L. bicolor var. tridentatus Det. C.P.S.

No. 5803. Ranunculus muricatus In wet fields, Sonoma Valley. L. Petals yellow.

No. 5804. Floerkea douglasii Baill. Pale yellow centers to corollas with white tips to petals, 1/3 white. The yellow is a canary kind of yellow and very distinctive. Made beautiful patches in the moist fields. Cont. on top next page.

No. 5805. Ranunculus lobbii Gray. Petals white, lines long, the summit of the claw with a yellowish (glandular) crest or ridge. This structure is a short transverse yellow ridge. There is no pit about it, nor scale. The

-over-

Sonoma Valley 115 ft.

Cont. from prev. page. no. 5804.
Floerkea douglasii, cont. Stamens alt. petals with a gland at base on back, i.e. the filament swollen into a gland or enlarged into a nectariferous swelling. Petals over half yellow, i.e. the upper ⅔ white, strongly notched at apex!

-cont.
Stamen counts are as follows: 16, 14, 14, 16. Achenes 4, 5 or 6, not rugose or wrinkled at this stage! Lateral lobes of leaves not notched or obscurely — Is this distinct? from R. bibbii.

No. 5806. Callitriche bolanderi?
Stamen solitary, in same axil with pistil, the latter 4-lobed at earliest stage (in anthesis), i.e. with the 4 lobes equably divergent in a circle. The lobes soon approximate in pairs, the pairs look like

single lobes with a marked groove down the back. Styles 2, rather long. Pistil often? solitary in axil, in either case there are two lateral bracts, whitish and inflated or spongy. Probably their function is to keep the fls. just above water for anthesis. The pistil appears to be in the axil between the two bracts with the stamen in front of it, i.e. next the axis. The styles are 5 times the length of the ovary. The most mature fruits are pedicellate, i.e. on pedicels "4 line long but might fall under "sessile or very nearly so" Bot. Cal. = ? C. verna. The fruits, so far as they have ripened, do not agree with my descrip. of C. palustris, altho otherwise agreeing.

Sonoma Valley

11 apr. '14

— All the lower Sonoma Valley near the bay was one great persian carpet in its glory of flowers, from Napa River to Schellville. It was very very beautiful. The day was perfect. The hills gloriously green and the world drenched with sunshine. all the neat little farms, so desolate in August, are now transformed, nay even glorified by the wonder of spring.

No. 5806a. Ranunculus muricatus L.
Sonoma Valley
wet fields.

2600 ft.

No. 5807. Coreopsis (Leptosyne)
A clear lively lemon yellow.
Rays, 10, 10, 11, 13. Open sandy mesas.

No. 5808. Eschscholtzia
Petals broadly obovate, decidedly crenulate at apex, 1½ to 2 lines long. Growing in protection of bushes, first summit west of Calico wash. Caulescent. E. minuti-flora var.

No. 5809. Eschscholtzia glypto-sperma Greene
Acaulescent, the leaves in a close erect tuft and "cut off" like the cropped hair of a Maxfield Parish child. This umbrella tuft protects the roots and the leaves of it one another. Petals fanshaped with somewhat curving sides, not strictly truncate at apex but very nearly so.

Calico Wash 2500ft.

No. 5810. Aster abatus Blake

Desert Aster. Mostly 1 to 1½ ft. high. Rocky slopes. Blooming abundantly this season and making a fine show. Rays 35, 40, 44, pale or whitish lavender.

No. 5811. Lycium cooperi Gray. I have never seen any plants of this species bearing such large leaves as this year. Due to the heavy rains of this season.

No. 5812. Amsinckia tessellata Gray. Det. McBride

Sepals 3, two broader than the third, slightly notched at apex, the third not notched Branching freely from base. Sandy mesa.

No. 5813. Zygadenus brevibracteatus Hall.

Perianth greenish-white, its

segments distinct, spreading nearly rotately. Inner segs. broadly oblong-ovate, slightly longer than the outer broad ones which are rhomboidal-ovate, all obscurely clawed. Stamens 6, the tips rotately spreading. Styles 3, distinct. Ovary one. Per. segments with a narrow green glandular ridge transverse the summit of claw and just above it (bordering it) a green band, which thus gives the effect of an "eye" to the center of the flower, or perhaps a "halo."

It were better to regard the transverse green band at base of perianth limb as gland, the gland being definitely bounded

Calico Wash 1500 ft.

downward by a sharp low ridge. Sandy bottom, Calico Wash. Ovules in each cell, 6, 7, 8. Ovary free or essentially free from perianth. Stamens distinctly on very base of perianth. Anthers sub-cordate, the cells as it were turned back on themselves and forming a couple of greenish ridges on back of anther. Per. segments involute after anthesis and persistent as narrow or subulate structures. Stamens shorter than per. segments. Per. segs. ½ lines long; per. 4 lines diameter.

No. 5814. Astragalus lentiginosus Douglas var. fremontii Wats. Calyx-teeth short, acute. Cor. purple. Banner strongly notched. Stamens 9 + 1. Wings and keel equal, the curved auricles on latter very strong.

Deep-sand of wash.

No. 5815. Caulyba candida Parry. Petals 6, orbicular. Sepals 3, roundish, caducous. Stamens 5? Ovary subglobose, the three linear stigmas decurrent upon its sides from the apex and appressed to ovary wall but not adnate, altho' seemingly so. Stamens 5, 6, 6, 6, 6, 6, 6.

Calico Wash 2500 ft.
Mohave Desert.

No. 5816. Eurotia lanata.
Each fruit is in the axil of a bract. The horns of the sac are right and left, and there is a marked, i.e. ready line of fissure, median, separating the bracts as lateral, not fore and aft as in atriplex, each bract terminating in the horn or appendage. Each bract has also a median clear line or midrib but is not so readily split along this line. The horn is terminal and is merely the lanceolate or attenuate apex which is undupliceti on itself! Ovary very hairy!

— Fouquieria splendens.
Miss Waterman calls it Candle Bush. "The least little rain sends it into leaf" Bright red flowers = flame.

No. 5817. See page 29.

No. 5818. Lasianus odoratus Hel.
Corolla a real purple, rich and royal, its quadrati white spot very sharply defined! Keel glabrous. Banner not notched.
Sandy wash.

No. 5819. Orthocarpus purpurascens Bth. var. ornatus Jepson
Bracts dull red-brown, tipped with pink-red. Corolla deep red, the sacs tipped with sulphur yellow.
Sandy wash.

— Drove out into the Calico Wash with Miss Waterman behind her pair of Hacks. It rained all the way, very hard on the first summit and in the wash. Drops small but having velocity and frigidity! But I got some good things and good wet.

No. 5820. Encelia frutescens Gray.
Stony hillslopes. A beautiful yellow, clear, rather pale or light yellow but rather clear, wonderfully clear, warm and lively. It is a fine color and the yellow Aster mine is said to have been named for it. It is called "Yellow Aster" in the desert. Rays 13, 13, not notched but unequally erosulate also not strongly or much. Rays 8 or 9 lines long & 6 or 7 lines wide.

No. 5821. Malvastrum rotundifolium = Eremalche rotundifolia Gray.
Corolla pink-crimson, its aestivation in anthesis so as to make a globose flower of petals. Stony hillsides. Cont. on p. 27.

No. 5822. Marah Macrocarpus
Very easily overlooked, forming a filmy cloud on the ground. Calyx-lobes ovate. Cor. lobes oblong, the 3 of the lower lip and the 2 laterally spreading one of upper lip much alike. Cont on p. 33
(see p. 90.)

det: A.L.G.

No. 5823 Mimulus inconspicuus Lemmon
Its entire habit is that of the dwarf mimuli of the Eunanus section. The corolla in its regular limb recalls some of the species like Mimulus (Eunanus) douglasii. But I recall no Mimulus which has a plane limb with the throat like a central circle cut into it, — no sloping into throat at all; the throat is an abrupt tube, as abrupt as can be. And the color is different, especially different as to parts, the white on the tips of the lobes rather than in centre, though the margin of throat is whitish. I know of no Mimulus either which is spurred or saccate at base of the throat, for the throat is long and tube-like, and the proper tube very short indeed. See over

Barstow 2105 ft.

No. 5823. Bent.

Plants 1 or 1½ inches high, annual. Leaves lanceolate, entire. Herbage opposite, purple-brown, including the calyx. Flowers on short pedicels, solitary in the axils, spreading nearly but not quite horizontally, i.e. ascending a little. Calyx prismatic-angled, its teeth unequal, the upper the longer. Corolla-tube little exserted, its limb spreading at an abrupt angle after the manner of certain Nyctaginaceae. Limb flat, i.e. plane, 4 lines broad. Lobes 5, subequal. The limb is very obscurely bilabiate, that is, its bilabiate character can only be made

out by study. The two upper lobes equal in size the two lateral lower lobes, the middle lobe of the lower lip being a little smaller than the others. The tips of the lobes are white, the rest of the corolla the prevailing purple-brown of the plant as a whole. The upper lobes of the corolla cover the lower in the bud, a stage which most easily elucidates the bilabiate character. Stamens 4, 2 long upper, 2 short lower, the anthers divergently 2-lobed and connivent in pairs. Stamens inserted on the summit of the proper tube which is very short, less than 1 line long; above the tube is the throat which is rather strongly distended or gibbous on lower side. Style

2-lobed stigma. Ovary with 2 central or axile placentae which lie closely face to face by their inner sides but quite distinct, not even connivent I think. Flower 8 lines long, glabrous, except that there is a line of spaced bristles down the lower side of the corolla in the saccate portion of the throat.

Its characters, therefore, lie between Mimulus and Mohavea.

No. 5824. Phacelia crenulata Torr.
Corolla deep blue, i.e. purple-blue. ovary pubescent. Style glabrous. Ovules 2 in each cell. Crest developed into a spreading lobe, but the narrow acute tip wholly adnate.

No. 5825. Stillingia paucidentata Wats.
Calyx 2-lobed posteriorly & anteriorly, borne in axil of a 3-lobed bract. Stamens 2.

No. 5826. Cryptantha barbigera = C. nevadensis Greene, var. inops K. Bdg.

No. 5827. Phacelia (vallismortae Voss, not P.) hispida Gray.
Cor. lavender; scales connivent in pairs over base of fils., then curving outward and upward, sort of shortly retrocurved, then running straight up the tube, adnate but with a free lance or ovate tip. cont. p. 25

No. 5828. Mentzelia tricuspis Gray.
Pets. narrow-obovate, obtuse, with a short acute tip. Fils. flattened, acutely notched at apex, the anther borne on a filiform prolongation from the notch short. Calyx-lobes after anthesis becoming involute and caudiform-rotate. Corolla straw-white. Roots carrot-thickened cont. p. 26

No. 5829. Pectocarya ~~penicillata~~ ~~A. DC. var. spissa Jepson~~ = P. heterocarpa Jtn.

No. 5830. Chorizantha rigida J. & G.

No. 5831. Dalea arborescens Torr.
Shrubs, 2 or rarely 3 ft. h., abundant in the washes southerly from Barstow. - See p. 24.

Barstow 2100 ft.

No. 5832. Malacothrix Coulteri

Heads in anthesis one inch across, the central yellow, the outer row straw-white. Stony hillsides. Bracts elliptic-ovate, passing inside to ovate to oblong-linear, scarious with a central strap-shaped mostly spot. Cont. bottom page 23

No. 5833. Mentzelia affinis Greene.

Lower leaves broad and large, almost entire. Stony hillslopes.

See 5843.

No. 5834. Amsinckia tessellata Gray. Det. McBride.

See p. 32.

No. 5835. Acamptopappus sphaerocephalus

Round bushes, woody at base, 1 ft. high. Cor. lobes acute, translucent with thickened margins.

No. 5836. Hesperocallis undulata Gray

Flowers in a raceme, 14, 18

Perianth 2 1/4 to 2 3/4 inches long, white with a broad flush green band of 5 to 7 close lines on the back of each segment. Stamens equalling segments; anthers versatile below the middle. Style

slightly exserted, its stigma terminal, unlobed, disciform. Tube about 1/2 length of segments. Called Sand Lily by J.H. Manson of the Waterman Ranch. Spms. given to Miss Waterman by someone at Doggett on below.

No. 5822 cont. from p. 16.

Cor. lobes oblong-acute, shorter than its tube. Cor. glabrous. Staminal column & style down-curved a little at tip.

— Malacothrix No. 5832. Cont. from p. 22. Achenes with 5 ridges or ribs running into short teeth, each of these ribs with 2 equal ribs between them, making 15 in all. Pappus hairs finely scabrous. Receptacle with fine bristles about as long as the achene. Pappus-bristles some of 6 together, but have to each other very slightly. Bracts very often the linear or lanceolate midrib as

thickened! and herbaceous brown. Works well through Hall's key to Malacothrix and to the blunt silvery-scarious scales of M. coulteri, but "cauline leaves" not pinnatifid". Bot. Cal. says leaves "similarly "laciniate-pinnatifid or toothed". The receptacle bristles are capillary and not stiff; they are persistent.

- Dalea arborescens, no. 5831, cont. from bottom p. 21. Upper 2 calyx-teeth erect, lower 3 recurving, the latter lanceolate-subulate, the former broadly lanceolate. Wings & keel petals of about the same shape; both with strong auricles at base. Ovules 2! Petals on slender claws, inserted with stamens at summit of turbinate base of calyx.

- Phacelia hispida Gray, no. 5827. Ovary with straight ascending hairs, the undivided half of the style pubescent. Fils. glabrous. Cor. with very rounded lobes and overlapping bases. Anthers white. Always grows in protection of brush. Dr. Helen Waterman says color is lilac. see p. 21.

- Sego. [Name of Mrs. Manson, where a child, at San Bernardino, i.e. used by the children. Miss Waterman says saponine quality is better after drying; used when it was desired to have certain things particularly white. Also used as a poison oak remedy by the Spaniards and regarded as having great virtue. [Sego of Great Basin = Calochortus excavatus Greene = Wishbone Bush

= ? Chlorogalum pomeridianum.

- Mirabilis of the desert, white-fld. Miss Waterman says there is in addition a difference, in habit, from the purple-flowered one of San Bernardino.

- Mentzelia tricuspis. no. 5828, cont. Seeds in miniature capsule one row in each placenta, strongly rugose, the rugae or rather wrinkles few & deep. Looks like a short sausage lumpily filled. Stamens in 4 or 5 rows, the 2 outer rows dilated and acutely notched. Style very shortly 3-cleft. The only species in the Botany of California which at all answers to Mentzelia tricuspis but only the outer fils. are dilated, there is no "transverse orange band" and the lateral cusps do not anywhere near equal the anther. Capsule reflexed in maturity, a marked character! Stony hills.

Cont. from p. 21.

- Malvastrum rotundifolium, no. 5821, cult. from p. 16. Stigmas capitate. Petals lilac with a large circular crimson spot at base, very striking & showy & unusual. Bracts 3, cordiform.

ambigua Gray, not S.

No. 5837. Sphaeralcea fendleri Gray. Called Apricot Mallow by Miss A. L. Waterman. Ovules 2! one ascending, the other descending (apical). (basal), A number of carpels were examined. Petals brick-red or apricot flesh color (Moorpark variety), 10 lines long, notched at the broad apex. Carpels not depressed, but elevated above the axis. Sepals (i.e. calyx-lobes) exceeding them (at this stage). Bracts 3, filiform, hardly longer than calyx-tube, thinly stellate-canescent; calyx sub-glabrous. Does not fit (See p. 29)

No. 5838. Eriogonum ~~Thomasii Torr.~~ pusillum T. & G.

No. 5839. Eriogonum Hinmarii. Per. in anthesis yellow, its segs. plane; in fruit enlarged, saccate, reflexed!

No. 5840. Atriplex hymenelytra One foot high.

No. 5841. Rafinesquia neo-mexicana Gray (discarded, insect damaged) Flowers pure white, the backs of the ligules purplish-brown marked. Bracts, inner, green with a lanceolate purplish midrib and white border, the calyculate one similarly marked save for the purplish center. In protection of bushes.

No. 5842. Plantago. Stony hills everywhere.

No. 5843. Mentzelia albicaulis Dougl. Bark very white & smooth. Petals yellow, not orange nor golden, 2 to 2½ lines long, acute at

apex. Seeds in one row! on each placenta. Style shortly 3-cleft but the divisions so closely appressed at this stage that look like one entire style! Petals obovate, merely obtuse at apex. Filaments all filiform. Answers well the description of M. albicaulis. cf. no. 5833.

— Erodium texanum Gray. No. 5817, cont. from p. 15. Barstow, hills south.

— Sphaeralcea, No. 5837. [Cont. from p. 27 at bottom] anywhere in Synoptical Flora or Bot. Cal. The species of both Malvastrum & Sphaeralcea seem poorly described or else very difficult and perhaps little known. This experience with this plant shows the futility of the distinction between these two genera.

Barstow to Ord Mt.

May 2-3, 1914

— Left Barstow early Sat. am.
— Dr. Helen Wolerman, Miss Abby Lou Wolerman, Mrs. Rice, J.H. Munson and myself. To Daggett, thence S. to Ord Mt. The way grew more interesting as we went on; we passed a flowering filled mesa with park-like aspect in it, the shrubs many in flower, with an abundance of Eschscholtzia no. 5846. This is very abundant all through the desert. Miss W. says that she has never seen so much of it before. The long slender pointed pods rise promptly above the flowers which are peduncled at a common level. The Apricot Mallow, no. was very fine and gave a joyous aspect to the wagon trail. Nearer Ord the cacti became more abundant and in greater variety

No. 5844. Phacelia

Beautiful clear tint of lilac-blue with yellow throat. Stamens long, straight, wholly adnate, without "ruffle" at base. Style shortly 2-cleft; ovary hairy; part of style pubescent. Lower bush near Ord Mt.

See p. 40.

No. 5866. Yucca mohavensis Sarg.

Filaments clavate or sausage dilated at tip, the anther adnate to very end. Fils. pot-hooked shaped as the clavate portion turned abruptly outward. The clavate portion shrivels after anthesis. The ovary is divided 1/3 way to axis by 3 very narrow sutures. — Common on all the hills from near Daggett to Ord Mt.

Osborn's camp, Ord Mt.

– Amsinckia tessellata (Gray), no. 5834 "Horses fond of it. Eat it in preference to alfilaree. Miners call it Devil's Lettuce from the little bristles on it, but horses don't mind the bristles. Burros are very eager for it and reach for it and wont pass it." – Geo. Willis.

– Grayia spinosa, Called Salt Brush by Willis who says sheep are very fond of it.

– Ephedra, Called Squaw Tea as well as Desert Tea and Whorehouse Tea. Willis says it is a good substitute for ordinary tea and used as such, the branches being used for an infusion. Add sugar and cream and it is first-rate says Willis.

– Eurotia lanata.

– we followed a good road south from Daggett. As we gradually ascended we came into a dry wash filled with the following species: Bladder Sage (Salazaria mexicana); Chaffy-headed Composite, no. 5855; Senecio douglasii shrub with large fls., no. 5854; Chilopsis saligna; Desert Peach, no. 5865; Dalea's, nos. 5852 and 5847; Encelia, no. 5850; Franseria dumosa) the common species everywhere in the dry hills;

– on the summit of Ord Mt. – see p. 35, – it was a great surprise to find Turtle shells, mostly broken, lying amongst the rocks. Eagles capture the turtles on the valley mesas and bring them up here, dropping them from high in the air, to break open the shells and thus get pickings from the body inside. See in the ancient literature (? Aeschylus).

Ord Mt. - 4954 = summit.

– Hills at Osborne's Camp: the following species: Yucca brevifolia; Lycium andersonii, tubular corolla; Rosaceous spiny shrub*, no. ; Pencil Cactus, the most slender cylindrical stemmed one; Grandfalleri Cactus, no. 5928; Erodium cicutarium, the common species here, indeed I have not seen any other; it is highly valued for fodder and is an exceptional case of an immigrant being of economic value. Grayia spinosa. Phacelia whitlavia.

– Ord Mt. altitude. My estimate (on p. 46) of 6500 is a guess based on Fry Mt. to the south, the nearest U.S.G.S. Bench mark = 4100 ft. The exact figs., 4954, on p. 74 I had from the State Mineralogical Bureau. This would seem to be too low.

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* Coleogyne ramosissima

– Eriogonum inflatum: "full of water, a resource of quail and other desert animals. Rub it – just as it is coming into flower and your hands are all wet." – Geo. Willis. Which is quite true at just this season.

– The view from the summit of Ord is very fine. The most prominent spectacle is the San Bernardino and San Gabriel ranges covered with snow. The San Bernardinos San Gorgonio and San Bernardino are splendid and are only excelled by Baldy (San Antonio). Family in the north distance + only to be seen by good eyes is the high snow capped hood of Telescope Peak. whilst all about is the desert valleys and desert ranges, Fremont Peak, Calico Range, and Newberry Mts, lonely, vast, desolate. See p. 33.

Ord Mts.; Mohave Desert.

No. 5845. Oenothera californica Wats. Abundant in river bed of the Mohave, the white sands as if sheeted with paper. Corolla white, turning pinkish in age. Barstow. 2150 ft.

No. 5846. Eschscholtzia minutiflora Wats. Very distinctive thing. Petals 2 1/2 lines long. Mesas everywhere. 2 to Daggett. 2200 ft.

No. 5847. Dalea mollis Benth. Common in a wash near Daggett. Stems and leaves sprinkled with black dot-like glands.

No. 5848. Yucca mohavensis Sarg. = Y. schidigera Roezl. 2500 ft. Mostly unbranched and 4 to 6 feet high. The fibrous edge of the leaves used by birds in nest building, says Miss Waterman. 2600 ft.

See p. 76.

San Bernardino Co. 2 May 1914. Wash N. of Ord.

No. 5849. Dysodia Cooperi Gray. 2200 ft. Rays golden, 12, 13, 16. Woody-crowned perennial.

No. 5850. (Discarded, insect damaged) Eucelia californica Nutt. var. actoni!! Rays clear lemon yellow i.e. bright

No. 5851. Krameria parvifolia Benth. Very heavy with flowers; I have never seen it loaded so before.

No. 5852. Dalea Johnsonii Wats. Flowers in technical chars. just like those previously described from washes south of Barstow. [cf. No. 5831.]

No. 5853. Nicotiana trigonophylla Dunal. Wash towards Ord Mts. Cor. 8 lines long, limb 5 lines wide. See p. 50.

No. 5854. Senecio douglasii DC. var. monoensis (Greene) Jeps. Forming shrubby bushes 4 to 6 ft. h in the washes.

No. 5855. Hymenoclea salsola T. & G. Shrubs making a great show of heads with silvery scarious scales.

Ord Mt. 2800 ft.

No. 5856. Sphaeralcea ~~fendleri~~ Gray. No! see below.
We drove for two miles or more through an avenue of these with the plants forming round clusters 1 to 4 ft broad. Stems many from the base and with many flowers. Very showy and highly attractive, giving a lively and glowing effect to the wagon trail. = S. ambigua Gray.

No. 5857. Platystemon californicus Bth.
With sulphur-yellow spots at apex of petals and a little at base, the markings of yellow variable in size and development; or the petals wholly cream color, right on plants in the same colony. The plants show flowers all of one kind, in any event.

San Bernardino Co. 2 May 1914

No. 5858. Gilia ~~latiflora Gray.~~ stellata Heller
Corollas small, whitish or nearly white. = ~~G. tenuiflora var. sinuata (Dougl.)~~

No. 5859. Gilia ~~[illegible]~~ cana (Jones) Heller ssp. speciformis A. & V. Grant
Corolla tubular-funnelform, pink, a very beautiful color.

No. 5860. Nemacladus
Larger-form corolla, whitish with yellow tips to segments. The upper pair of segments stand erect, with approximate tips. The 2 processes from upper pair of stamens are long and bear, each, 4 bright ~~white~~ or rather translucent cylindric glands.

No. 5861. Nemacladus
Smaller-flower. Cor. duller with brownish tips to segments, or concolored. Processes on stamens are shorter and with 1 to 3 cylindric translucent glands.

San Bernardino Co.

Ord Mt. 2 May 1914. 3000 ft.

No. 5862. Mimulus bigelovii Gray. Det. A.L.G. Fine yellow spots in throat, well defined, with red-purple spots laterally. Wash. Cor. crimson.

No. 5863. Eriogonum pusillum T. & G. Wash

No. 5864. Bromus trinii Desv. Grass. Det. A. S. H.

No. 5865. Prunus fasciculata Gray. Wash. 6 ft. h. very rigid and crookedly i.e. divaricately branched.

No. 5866. Yucca = Y. schidigera Roezl. Sarg. mohavensis See page 31. Common on Ord Mt. on the lower slopes and on the hills half-way or more north to Daggett. See p. 76.

No. 5867. Oenothera scapoidea T. & G. Inflorescence flowering unilaterally Cor. white. i.e. infl. coiled at tip. Wash. Anthers stellately radiant from style just below stigma in anthesis. Flowers white. Pets. 2 lines long.

No. 5868. Penced anum mohavense C. & R. Stony hillslope.

No. 5869. Calycoseris parryi Torr. Common all over Ord Mt. and the lower attendant ridges in the neighborhood. Ovary with laterally placed very hairy style. Calyx-lobes 4. Very densely and intricately branched shrub forming compact closely interwoven masses 1 or 1½ feet high. The flowers are very abundant this year. Often they stand behind, i.e. lower than the rampart of dead spiny branchlets which cover the shrub. Br-

Ord Mt. c. 3000 ft.

anches rigid, spiny, opposite.
Remarkable for its lack of petals, short, its opposite branches and 4-lobed calyx.

No. 5870. Delphinium parishii Gray
Common in the washes and on the low hills.

No. 5871. Ellisia membranacea Nutt.
Corolla white.

No. 5872. Hilaria rigida (Thurb.) Benth. [Lect. Beecher Crampton, Jan. 1973]
Rocky hills. P. jamesii Torr. acc. A.S.H. Pleuraphis rigida Thurb.

No. 5873. Echinocereus ~~Cereus~~ mojavensis Engelm.
Cactus. Flowers a peculiar livid red. Stigma velvety-green. Anthers and filaments crimson.

San Bernardino Co. (Torr.) Greene.

No. 5874. Cryptanthe pterocarya.
Fruiting calyces with the effect of buds.

No. 5875. Gilia aliquanta A. & V. Grant ~~tenuiflora Gray~~.
Corolla light blue.

No. 5876. Eriogonum pumilum Nutt. ssp. confinoides Crang.
Rocky ridges in very rocky places on Ord Mt.

Dougl. var. ordensis Jepson n. var.

No. 5877. Astragalus inflexus
see p. 44.
Corolla purple. Banner notched, with a quadrilateral white spot with purple line markings; wings very narrow, linear, auncled at base, also with a lobe above the base which locks into a pocket on the keel-petal. Keel-petals narrow, 2/3 length of wings, wings scarcely shorter than banner.

Ord Mt.

Stems prostrate, forming circular plants with the woolly pods lying in clusters at the ends. Very striking. Ridges of Ord Mt; on summit also. Calyx teeth short; "in relief," on tube. = A. purshii Dougl. var. ordensis Jepson.

No. 5878. Astragalus didymocarpus Hook. Diffuse. Whitish-purple corolla. wings narrow, with processes fitting into complimentary structures on Keels. Wings much shorter than Banner, the Keel nearly as long as wing. Banner and Keels lilac or whitish, the Keel purple. Open hills.

No. 5879. ~~Allium parryi Wats.~~

~~No.~~ A. fimbriatum Wats.

W. L. J. Nov. 1918.

Double crests on the back of each lobe, running up alongside the lower part of style as free wings or appendages. These crests are more marked than on any other species of allium that I remember. The crests are joined at the base in pairs and then curve promptly

 4954 ft. acc. State Min. Bur. **Ord Mt.** Summit about 6500 ft. I estimate; prob. higher. See p. 34.

upward so as to be vertical
Perianth segments broadly lanceolate, whitish, with green or brown midvein. Crests notched or toothed at apex. Style barely 3-cleft.

No. 5880. Calochortus kennedyi Porter.
Ridges on Ord Mt. Early for it as yet; most plants in bud.

No. 5881. Peucedanum parishii C. & R.
Ridges on Ord Mt. Flowers whitish.

No. 5882. Cirsium
This is the common species in the desert. Flowers white. Stems 5 to 6 ft. high, ending above in a panicle of few or several heads. Of course the "panicle"

is merely the cymosely branched summit of the stem, a head terminating the main axis and one on each of the simple branches. Ord Mt.

No. 5883. Phacelia campanularia gray.
Fils. slightly pubescent, dilated at very base, without crests or appendages. Corolla royal purple, cleft 1/3 the way down. Ovules numerous, on central i.e. axile placentae which are quite free from each other as in Mimulus species. Abundant in stream beds, very luxuriant and free flowering — the washes as if decorated for a festival. Also more luxuriant on

Ord Mt.

3000 ft.
2700 ft.

the outcropping dykes or rock-piles of Ord Mt.

No. 5884. Arabis perennans Wats. Ord Mt. Fls. reddish.

No. 5885. Ephedra viridis Cav. Ridges of Ord Mt. High

No. 5886. Phacelia curvipes Torr. Lavender-fl'd.

No. 5887. Phacelia fremontii Torr. Cor. tube yellow.

No. 5888. Ericameria cuneata var. spathulata Hall. Composite. On very summit of Ord Mt.; also at "Rio Vista Claim". Low shrub, 1½ to 2 ft. h.

No. 5889. Syntrichopappus fremontii Composite. Table-land summit of Ord Mt.

San Bernardino Co.

No. 5890. Forestieria neo-mexicana Gray. In bottom of gulch, right hand cañon above Osborne's Camp, Ord Mt.

No. 5891. Cryptanthe utahensis greene. Ord Mt.

No. 5891a. Thamnosa montana Torr. Frem. Corolla black purple, 4 lines long. Petals elliptic, distinct. Stamens 8, 4 long and 4 short. Style simple; stigma capitate. Ovary stipitate, 2-lobed.

No. 5891b. Castilleia angustifolia G. Don. Near Ord Mt.

No. 5892. Chilopsis saligna Don. C. linearis DC. Washes, halfway to Ord Mt. from Daggett.

No. 5892a. Acacia greggii gray. Near Ord Mt.

No. 5893. Aphyllon cooperi Gray. cont. See p. 50. Cor. 9 to 12 lines long; lower lip longitudinally plicate, the two palatal folds yellow; the upper lip erect, the lower little spreading. Cor. purple inside. Stamens 4, inserted low on tube and included. Sepals 5, lanceolate, hardly half length of corolla. Pedicels mostly shorter than calyx by half. Bractlets 2. cont. p. 50.

Ord Mt. 3 May 1914.

– Nicotiana trigonophylla Dunal. no. 5853. Cont. from p. 37. Tube about half length of throat. Fils. hairy at very base, inserted at summit of tube. Cor. cream-white, the anthers and stigma at mouth of throat.

– Aphyllon cooperi Gray, no. 5893, cont. Cor. pubescent. Anthers only slightly hairy. Spike simple or much branched. It is the 2-lobed upper lip that is purple, the rest of the cor. being much less purplish. Agrees best with A. ludoviciana in Bot. Cal. but flowers not "mainly sessile".

No. 5894. Populus fremonti Wats. I do not see any difference between this and the tree of the Californian valleys – Barstow, 5 May 1914.

Mesa 3 miles S. of Barstow, 8 May 1914

– The whole country is dotted rather closely with Larrea mexicana, closely enough to give a green effect. As abundant in individuals but only showing close at hand is Franseria dumosa. The former is mostly 3 or 4 ft. h., the latter 1 to 2 ft. h. The washes are colored yellow by Cassia armata, Atriplex confertifolia is common in places, a few Salazaria mexicana, Dalea arborescens, Eriogonum inflatum, Erodium cicutarium is very abundant, mostly small plants but the individuals outnumbering all other species put together; Krameria no. 5851 noted again

Barstow to Stoddard's Well

– The road leads south from Barstow. It runs over the mesa many miles with Calico mts in view to rear left. We pass a summit and descend into a broad valley where there is good botanizing; ascend a low range and pass through it onto a descending slope into and up a narrow valley to Stoddards Well which is on a spur (north side of it), east of Stoddard's Peak, the prominent landmark of this country and towards which we had been heading all day. We got in late, and began to get anxious about water supply, when the tank could be seen shining under the last rays of the descending sun. It is a beauty camp spot; with fine view, good grass and abundant & good water.

Posted Sign on the Desert, at Stoddard's Well.

Fifty Dollars Reward!

For the discovery of the body of Samuel Willis, supposed to have been lost on the desert near Daggett, California about August 4, 1913. Information regarding same to be sent to A. L. Willis

1721 East Fifth St.,
Long Beach, Calif.

– Dr. Smith says: "His horses were found, one lame, and it was feared he was lost. Two parties were started out. Found on foot with one man and followed one trail. Another party on horseback took up the other trail. The other trail proved to be his last trail but in a certain place they said they lost it and came back. Well anyone can follow a trail on this desert. They said we should have the horses and go out at noon but

Mohave Desert.

they didn't bring the horses. We were played out and go further on foot. When we inquired about it the next day they said: Well, you watch for the buzzards and then we can go out and bring him in"! His body never was found. He was accounted "queer" and obstinate, and attempted things on the desert which no man should attempt. It was noticeable that Smith in referring to the people who should have brought horses from the ranch mentioned no names! The horses of Willis may have broken away from him. One broke loose from the wagon, the other was found dead in a gulch still with the wagon?"

See p. 60.

Notes on Langlotsia schottii. No. 5912

(Torr.) Cor. pink, bilabiate in disposition of lobes, with delicate, reddish markings, 3 in lower lip, the two upper laterally divergent. I notice one corolla in which the lobes of upper lip are not parted to throat, but show a distinct palate. I now see that other flowers show this characters also but so weakly as to almost escape notice. The lobes of upper lip are split quite to the throat. — Sandy washes on tilted mesa. Stamens inserted right at throat; anthers yellow. Cor. lobes 1/4 to 1/5 length of tube.

Check up herb-nos. of Compositae in this book. Round-headed Rabbit Brush, Narrow-headed Rabbit Brush + other x refs.

See p. 97.

– Chrysopsoid composite, no. 5902? common in stream beds 5925 near Stoddards Well, rarely over 6 to 8 inches high, many stemmed from base.

No. 5895. Lupinus horizontalis Hel.
Axial stem which flowers early and has already shed the seed from its pods. This stem, 4 or 5 inches high, is already completely hidden from view by the many stems from the base, ascending & their erect, sunal (shortly)-branched flowers lavender, soon changing to white. Mesas s. of Barstow.

L. horizontalis var. platypetalus C.P. Sm. — Det. C.P. Smith.

L. microcarpus Sims var. horizontalis Jepson. Det. W.L.J.

8 May '14

No. 5896. Ericameria monactis Mccl.
Compositae. Mesas s. of Barstow 1 to 1½ ft. h.

No. 5897. Cassia armata Watz. washes. s. of Barstow. Coloring the washes yellow for miles, 1 to 2 ft. h.

No. 5898. Acamptopappus sphaerocephalus Gray.
Comp. first valley beyond summit s. of Barstow. 1 to 1½ ft. h. mostly. The spots of yellow color made by these depressed globose plants add greatly to the festive appearance of the desert at this season. See 5907. See pp. 93, 97.

No. 5899. Franseria dumosa
The commonest species on the desert after Larrea. mostly 1 to 1½ ft. h.

No. 5900. Dithyrea californica Harv.

No. 5900a. Erysimum asperum DC; Kare

No. 5901. Glyptopleura setulosa Gray.
Cichoriaceous. Beautiful but very delicate pale yellow.

Stoddard's Well

Mohave Desert

No. 5902.
Composite. Sandy wash.

No. 5903. Astragalus layneae Greene.
Diffusely spreading, 1 1/2 ft. h.
Sandy wash.

No. 5904. Baileya multiradiata Harv. & Gray.
~~Strap. inflatus Greene.~~

No. 5905. Hordeum leporinum Link.
[Det. Beecher Crampton, Jan. 1933]
Stoddard's well. The horses eagerly favored this in preference to alfalfa!

— Erodium cicutarium.
The only Erodium of this section on the desert. It is very common everywhere, easily outnumbering all other species in individuals. It is most luxuriant on the sand and humus drift which accumulates to the leeward of every Larrea tridentata bush. A few feet or a foot away the plants are often only 2 or 3 inches high. In the shelter of the bush stems are 1 to 2 ft. long!

— Prosopis pubescens, Bth. Doc. Smith says: "Miners and prospectors collect the pods of the screw mesquite, brown them or roast them by heat, grind them up and use them for a drink like coffee by boiling. They are regarded as a substitute for coffee and prospectors are fond of the drink."

No. 5906. Calycharthis Kennedyi, Porter.
Stoddard's well.

No. 5907. Ericameria monactis McCl.
Composite. This was very beautiful in its trim rounded form 1 to 1 1/2 ft. high and giving a touch of finish or order to a park-like garden slope. Stoddard's well. See 5898.
See p. 97.

No. 5908.
Grass. The horses eat it without pressing.

No. 5909. Avena fatua L.

Stoddard's Well c. 2700 ft. Mohave Desert.

No. 5910. Tetradymia ~~spinosa H.&A.~~ axillaris A. Nels.
Beautiful silvery shrubs 3 to 4 ft. h., in pleasing contrast to the rich dark green of the Larrea.

No. 5911. Mimulus bigelovii ect. A.L.G. Gray.
Sandy washes. Very compact and showy.

No. 5912. Langloisia schottii Torr.
See p. 55.

No. 5913. Baeria
Composite.

No. 5914. ~~Hasackia~~ Lotus humistrata (Greene)
Fairly common.

No. 5915. Nemacladus
with whitish corolla and lobes not marked or faintly pink-tipped. The stamens had no glands that I could see by looking into the corolla tube with a lens, whereas in both the forms collected at Bars-

tow the corolla tube was open enough to see the staminal glands.
[Parish marks this N. adenophorus

No. 5916. Astragalus acutirostris Wats.
Cor. pale lavender. Towards Ord Mt. + at Ord.

No. 5917. Eschscholtzia minutiflora Wats.
Common on the desert everywhere but less abundant than the large-fl'd no. 5809 (E. glyptosperma Greene.)

No. 5918. Oxytheca perfoliata
Trailing or procumbent!

No. 5919. Opuntia basilaris Engelm.
Rose-red fls. very beautiful.
Matthews calls this the "fan cactus".
See p. 69.

No. 5920. 1 Stephanoveria pariyi
Compositae Cich. Colony in a circle of 20 ft. diam. Not otherwise seen.

No. 5921. Gilia matthewsii Gray. =Langloisia
This seems to be a major form of no. 5912

No. 5922. Baileya multiradiata Harv. + Gray. Comp. About 10 stems ascending from an annual root- apparently. Clear lively lemon yellow. Beautiful plant. Only one individual seen.

No. 5923. Peucedanum mohavense C. + R. Rather common

No. 5924. Prunus fasciculata Gray. Shrub in wash. ½ to 8 ft. h. always in many-stemmed clumps! Ord Mt. Notice fertile plants sterile plants.

No. 5925. Chrysothamnus paniculatus (Gray) Hall Comp. Characteristic plant of stream beds with distinctive habit on account of its tufted foliage at ends of erect slender branches. Ord Mt.

— Mendenhall's map and description, Desert Watering Places, is very inaccurate. Stoddard's well he says "no name" altho it has been known as such for many years. It is not on "E. side" but south side of spur, and should be located with reference to the prominent peak westward. He speaks of Ord Spring on west side of Ord Mt.; "an old camping place and readily found". No such spring exists! When any one in giving directions says in an offhand way: "Oh, you can't miss it. Just go so far. You can't miss it" why then beware. Hunt up explicit directions from some one who knows. LeConte Springs* are described as at east end of Ord Mt. & plainly marked by rubbish left by campers. No spring is known by that name in this region says Doc. Smith.

* See p. 71 seq.

Ord Mt. 4954 ft. (See summit: p. 34.)

who has traveled this country many years and no spring at all exists at the place indicated** Directions for desert travel should by all means be accurate since life as death often depend on water.

— Mountains in the desert. —

Miss Waterman says she finds it difficult to make her friends believe that there are mountains in the desert. The desert mountains are the great charm of the Mohave. They give it variety and mystery and offer a wonderful background for the play of desert colors.

* See vol. 32, p. 34.

** I think there are two "Ord Mts" close together.

— acacia greggii. Stream beds on Ord Mt. 6 to 16 ft. h, trunks 4 to 13 inches diam. at 1 ft. Utterly leafless still! Presents a strange appearance with its winter aspect— light brown bark broken into somewhat imbricated ribbon-like strands 3/4 to 1 in. broad.

No. 5926. Haplopappus (Stenotus) linearifolius T.&G. var. interior (Gr.) Jones

Rays 15, 15, 12, 13, 17.

Spreading many-stemmed bush 12 to 20 inches high.

Rays yellow.

No. 5927. = Echinocereus Coreus engelmannii Parry. Cactus, Small Barrel. See p. 69.

No. 5928. Opuntia erinacea var. ursina Grandfather Cactus

Ord Mt. 4954 ft. summit.

— Doc. Smith says that when he was near Death Valley two or three years ago a party came in collecting the "Amargosa Lily" who said he received 50 cents apiece for the bulbs.

— Ephedra viridis, no- grows in the rocky outcrops or rock peaks on Ord, even to the highest one.

— Willets tells mine of a Red Poppy in a canon near Willow Spring. This tale excited our whole party on the occasion of our first visit to Ord. He told this to Miss W. at dogget and we speculated a great deal about it when we drove up. As we came near the mt. I saw the road bordered with that wonderful apricot Mallow we decided that this was the "Red Poppy". But Willets

expressed almost amazement that this should be called a poppy and, both momentarily crestfallen and somewhat apprehensive, we started over to the canon by Willow Spring where the rare Poppy was said to be. At the top of the first ridge we came upon the flaming red of Calochortus Kennedyi. This then was the poppy! and instead of going on to Willow Spring canon we went to the summit of Ord. On return to camp Smith told us somewhat informingly that this was not a poppy, that the real red poppy which he knew had a single flower to a stem 3 ft.-h. which bore somewhat maple-like or thistle-like leaves. We were by this time quite discredited. Smith, how-

ever says the poppy flowers in June, that only one plant grows in a place and that he has seen it in only two different years since he has been here. He describes the flower as three inches broad I should say. (the equivalent of) Willet's calling Phacelia whitlavia "Blue Fuchsia" helped to confirm me in the belief that he didn't know a poppy but so far the joke is not on Willets.

= Eriastrum eremicum (Jeps.) Mason

No. 5929. Gilia virgata Stend. var. floccosa Millikin. Cor. lavender.
= Hugelia eremica Jepson!

No. 5930. Delphinium parishii Gray Cor. lavender blue. Common. hit by the sun, the stalks shine in the evening air on the slopes of Ord.

– W. H. Smith ("Doc. Smith of previous pages) says: "Fan-cactus (no. 5919) with rose-red flowers best remedy for snake bite you ever see. Throw the slabs in the fire until the spines are burnt off and bind on hot. Very drawing. Cook the slabs in an oven until hot, not burned, and make a soft lather and bleach tanned hands and face. Why I believe that thing would make a nigger white." Barrel Cactus (no. 5927) has an insignificant yellow flower, very seldom in flower, the best plant to save you from thirst on the desert; chew the pulp. One of them contains an awful lot of water. Yes the other

cacti might do, but I've never tried em. Some of 'em are said to be poisonous. Creosote Bush [Larrea mexicana] poisons me sometimes like Poison Oak. I've had it poison me. Blisters the skin; skin swells up; closes the eyes. Several fellows at the camp here who had to get the bush for wood were poisoned. It is certainly poisonous to some. The roots make the best wood, a very hot fire; in an air-tight stove smell like ammonia after reduction to coals. I use the fan cactus also to draw boils. The water indicators in this country

are Screw Mesquite* & Creosote Bush. In case of the latter when it shows great vigor or greenness in the dry years or dry seasons."

— Acacia gregii. Utterly leafless & dead-looking. No sign of sprouting. It must come into leaf late. Stream beds, Ord Mt.

— Cont. from p. 63 ante *: There are springs to the east and northeast of Ord Mt., in the cañons on e. & ne. I myself have now been to Sweetwater Spring (cf. F. B. 50:115).

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* Prosopis juliflora.

– Driving east from Ord Mt. to Stoddard's Well which is at foot of ridge near Sidewinder Peak [of Sidewinder Mine in vicinity], one keeps to right side of the great broad valley we crossed in going to Stoddard's Well from Barstow. We finally pass a point, going between a little butte and the point proper (on our right), across the valley to another point which we pass over and then wind through a gorge and up onto a mesa and across the mesa straight towards Ord Mt. We strike at right angles the main road south to Rabbit Springs, turn to left and wind over mesa and finally come into

road leading to Osborne's Camp (on N. side Ord Mt.) from Doggett. After passing the point and little butte just above referred to if we had taken the wagon trail to right (both "roads" were mere trails) we should have come by a higher and better and probably longer road.

Leaving here Ord Mt. we leave to right two roads, one to Stoddard's Well, and a dim road). Then a road to left with monument and burnt Joshua's goes to Smith's Well. We take road to right. At next fork the right hand road is to Stoddard's Well. The left is our road. A black and also a white butte must be passed to our right. If we have them

Ord Mt. 4954 ft. summit

on the left we are on the army road says Doc. Smith of Ord Mt. Rabbit Springs has plenty of water, fine Cottonwood trees and is an excellent camp spot. The great range SW of here is the Granite Range. The prominent peak west of Ord is called Goat Mt. on account of the Mountain Sheep on it. The Mt. Sheep get their water from the Barrel Cactus. They stamp off the spines with their sharp hoofs and eat the pulp. The Joshua is a great tree. It is almost impossible to cut it when its dry, but it may be worked green and made into thin slices for protection of tree trunks. For

artificial limbs, etc. The root of the mock orange is a fine aperient (purgative) says Doc Smith.

No. 5931. Eriogonum inflatum Per. yellow. Colonies one hundred feet diam. giving the appearance of meadows on lower slopes of Ord very near the valley or basin floors.

Ord Mt. 4954 ft Summit. see p. 34.

– Yucca mohavensis. Mosses about 4 ft. h, about Ord Mt., sometimes 6 or 7 ft. The single column dies back and sprouts arise 2, 3 or 4 from the base or near the base. This vegetative reproduction apparently continues indefinitely. The leaves are 1 ft to 3 ft. 1 in. long. They turn down as they grow old, die and form a dead hush about the stem. When there are several stems clustered and 1 or 2 are dead, one can make a grand quick hot fire very quickly. The Yuccas are often used as signal fires for this reason.

See p. 36, p. 40.

✓ no. 5932. Lycium andersonii Gray. Berries elliptic, chrome-yellow. Bush 2 to 3 ft. h. and 3 to 4½ ft. broad. Common all about Ord on the mesas.

–

Papery headed Composite no. 5855 very common with preceding.

no. 5933. Chaenactis (Discarded, insect damaged) This white-flowered Comp. is the most common flowering plant now on the mesas and is everywhere very abundant.

– Grayia spinosa. Have never seen it so heavy with fruit. Fruits straw-white to blood-red and showy enough for flowers. Common on all the mesas about Ord Mt. Branches hanging over with load of fruiting bracts.

No ✓ 5934. = Hilaria Pleuraphis rigida (Thurb. Benth.) Grass. Common on the mesas this year everywhere. Gietta Grass.

– Krameria parvifolia Benth.
a comparatively rare plant as compared with individuals of other spp. But common about Ord. I.E. relatively to its occurrence in other areas so far as I have noted. Still it is in full & heavy flower which renders it conspicuous.

– Salazaria mexicana, common about Ord Mt.

– Encelia , no , in washes about Ord Mt.

No. 5935. Thamnosma montanum Torr. & Frem.
Rather common about the south and west base of Ord Mt. Fruiting very heavily this year. Smith says this is used in preference to Ephedra as a specific. Bot. Cal. says "rather rare" but it is not in the Ord region. Heavy turpentine odor.

– Dry lake just south of pass over west end of Ord Mt.:
Atriplex canescens, filling a great deal of the lower part of flat, most of it dead or nearly so and looking very blue at a distance

– Stanleya pinnata Nutt. no. 5937 filling an area of the flat five acres with color. Very handsome round many-stemmed plants, finest I ever saw, 4 to 6 ft. high.

Noon stop: Lulu ate greedily a bush of Franseria dumosa cropping it down to the woody base. Judy ate Arusinchia no. 5834., Devils Lettuce as eagerly. – But it soon developed that Lulu was hungry. See p. 81

– Rodman Mt., black & desolate, looms bulkily just directly east of the noon stop in dry lake flat.

Ord Mt to Rabbit Spr. (2900 ft.)

— Petalonyx thurberi. Its young green shoots developing. A little suggestive of Colletia cruciata. Washes south of Ord Mt.

— On the stretch of mesa and flat from s. base of Ord to Dry Lake near Rabbit Spr. the two dominant plants are Larrea tridentata and Franseria dumosa. The latter imparts a blue-green color to the landscape and is delicately complimentary to the restful dark green of Larrea.

No. 5936. Layia glandulosa (Hook) H. & A. Pure white rays. In flat under s. wall of Ord Mt.

No. 5937. Stanleya pinnata Britt.

See p. 79.

— Franseria dumosa. At the night stop at base of the low buttes s.w. of Ord Mt. there was no vegetation for the horses except Franseria dumosa. They ate of it little or scarcely at all. Perhaps if they had not had a feed of barley and alfalfa hay given them they might have eaten more, altho their feed from the wagon was not very liberal.

— The snowy crests of the San Bernardinos make a fine show from the pass over Ord Mt. To the left down we catch a view of the top of snowy San Antonio.

Rabbit Springs 2900 ft.

Mohave Desert.

— Rabbit Springs is a delightful little oasis with clear cool spring water and the welcome shade of 8 or 9 large Cottonwood trees. The place is fenced but strangers are evidently welcome as evidenced by the visitors register hung on the door of the little cabin.

No. 5938. Rochia
Dry lake bed. 1 to 1½ ft. h.

— Box S. Ranch is an old time ranch owned by Golding Bros is a rather good-looking oasis in the drear desert. It has alfalfa fields orchards and pumps water by a gas engine

— We made a dry camp about 7 miles east of Box S Ranch. The settlers have taken up nearly all the land in the mesa in this district and are putting down wells 150 to 170 feet and profess to pumps, and are pumping with water brought in from Victor.

— 13 May 1914. Made Cottonwood Springs, two small springs at a cattle station with 2 or 3 large Cottonwood trees and a willow tree. Old Woman's Spring is 1 mile beyond. The spring runs a brook 1½ ft wide x 5 inches deep. It is quite wonderful.

No. 5939. Allocarya cooperi Greene. Fresh fine patch of it, about Rabbit Spr. Took me back at once to the Sacramento Valley Allocaryas.

Rabbit Springs 2900 ft: San Bernardino Co. Mohave Desert

No. 5940. Calochortus palmeri Wats. Pur. lavender – Rabbit Springs

No. 5941. Cleomella obcarpa Gray. Fls. a pale yet lively yellow. Alkaline flats, Rabbit Spgs. cont. p. 85

No. 5942. Suaeda torreyana var. ramosissima Alkaline flats, Rabbit Spgs Many stemmed, diffuse

No. 5943. Gilia leptantha Parish ssp. purpusii Cor. lavender-pink. Mesa near Rabbit Spgs.

No. 5944. Lepidium flavum Torr. Mesa near Rabbit Spgs.

No. 5945. Argemone ~~intermedia var.~~ corymbosa Greene Sandy mesa near Rabbit Spgs.

– Eurotia lanata. There was considerable of this at last night's camp in Lucerne Valley but the animals would not feed on it. Before being taken out of the harness I ate a little of it – but

Judy would not touch it. Probably it has to be frosted to be agreeable to animals.

– Yucca arborescens. scattered over s. side Lucerne Valley

No. 5945 a. Not Eremiastrum bellioides Gray. Comp. Near Rabbit – Spgs. Mesa. = Monoptilon bellidiforme T. & G.

– Cont. no. 5941. Cleomella plocasperma Wats. var. mohavensis Comm.

Old Woman Springs.

- This is a good-looking oasis with alfalfa, a few orchard trees, a fig tree, old & large. We are headed for Twenty-nine Palms and as there is a long stretch ahead without stations we stop here at noon to rest over night and give the animals a good feed. The owners are Charles Martin & Swartout. Martin is a fine-looking type of frontier cattleman, sixty years old with iron-gray hair. He rides a good horse, wears a broad-brimmed hat, a revolver rests in plain view in his cartridge belt. Swartout has a refined speech and the manners of a gentleman. "Martin has killed his man and has been in San Quentin." — J. H. Manson.

May 13, 1914.

No. 5946. Mohavea viscida Gray. Corolla as if with 2 petals an upper and a lower, both penciled with fine dots in lines on a pale yellow or rather pale cream ground. Upper lip 2-lobed, the lower shallowly 3-lobed. The lobing of both suggest a strong erosulation of very broad petals. Stamens 2, connivent by their anthers above the slightly (at tip) arched style & entire stigma 1. Lower lip with strongly inflated palate and a central elevated yellow crest which is slightly [or better] short hairy and has a depression either side of it. Stamens & style under a sort of arched ridge of upper lip.

Mohave Desert

Old Woman Springs,

3186 ft.

Trail directions from man at Springs; to Warrens Well via Burns Cañon.

— Turn to right just beyond ranch, about 12 miles up see sign board, take left hand to Lone Cabin, about one mile beyond there is a turn to right to Mound Spring Ranch.

After this two roads turn to Bean Valley.

Cross Antelope Creek, water just to right. Road: Follows hogs back and drops down into Burns Cañon. ~~The wire corral and turn to right~~ About one mile Burns cañon wet spot on hill, water trough. 1/4 mile below wire corral, go through, Turn to right. Down through wash and then right hand track up to the Pipes. From Pipes into another corral, via draws

up & down. Follow down after wire corral and swing to left into Warren's Well.

Out water

— Swartout, says the desert shrubs are the main resource of their cattle, 700 head. He mentioned first Fransen's dumasa and called it a sort of sage. When I remarked that my animals would eat it only when they are very hungry he laughed and said he guessed it was a poverty diet. He praised highly Striplex torreyi and called it Water Sage (which is a fine name). He said the cattle were very fond of it. He said the cattle would not touch Isomeris arborea which is now in fl. at the ranch nor of course Creosote Bush. He called Eriog-

3186 ft.

onum inflatum. Indian Pipe Weed.

No. 5947. Pholisma arenarium Nutt.
Stamens 6, 6, 6, 5, 7, 7, 5, 5, 6, 7, 6, 6, 7, 6, 7. Seventeen clusters in one place!

No. 5948. Isomeris arborea Nutt.
Washes. 2 to 3 ft. h.

- At Old Woman Springs is a colony of #5822, circular patch on flat to which it gives color, patch about 300 yards diam. Example of species colonizing an area in desert almost exclusive of other species.

- Eriogonum inflatum at Old Woman Springs, flo. yellow.

San Bernardino Co.

No. 5949. Bebbia juncea Greene.
Composite. Rocky wall, arroyo. Old Woman Sprs. 2 ft h. spreading.

No. 5950. Nicolletia occidentalis Gray.
Rays 8, pinkish, pink-veined on back. Bracts 8, a broad one alternating with a narrow one, a yellow gland at tip, Heavy sickening odor, oblong somewhat turpentine in char. Sandy Mesa. Old Woman Sprs.

- Franseria dumosa. On the country passed over outnumbers Creosote in individuals on average of 5 to 10 to 1.

- Eurotia lanata, 3 miles past Cedar Stake (on way to Shay's Well).

- Krameria parvifolia Benth., very frequent. Spreading over ground. The low plants 2 to 4 ft. broad

No. 5951. Mentzelia tricuspis Gray.

Shay's Well, c. 4000 ft.

Mohave Desert.

L. ex cubitus var. austromontanus
L. albifrons Bth. var. austromontanus Jepson.

No. 5952. Lupinus austromontanus
Det. C. P. Smith.

11 stems from the crown of an annual root; tufted with basal leaves. Wash.

Flowers purple-blue; banner with closely reflexed sides & central slight yellow spot, changing to purple so corolla is concolored. Leaves very silvery. [Later: The above plant flowered but a second year. It is commonly flowering from perennial root.]

No. 5953. Eschscholtzia minuti-flora Wats.
Old woman Springs. Mesa.
"microscopic" flowers.

Sandy mesa.

No. 5954. = Cryptantha Eremocarya micrantha y greene.
Sandy mesa.

No 5955. Abronia pogonantha Heimerl
Sandy wash. Fls. dull pink, smaller than those at Barstow

– Eriogonum plumatella D.M.
2 ft. h. Erect compact-cylindric plants, the stems thickly ascending & intricately-branched, fruiting for 1 foot, at summer-spraying out into an inflorescence

– Round-headed Rabbit Brush (no. 5898) is the common Rabbit-Brush all the way from Barstow 21– is on the whole an important member of the group cu-

No. 5956. Zygadenus brevibracteatus Hall
Sandy mesas. Shays Well
N. of

No. 5957. Mirabilis bigelovii Gray
var. aspera (Greene) Munz
Sandy mesa

Shaw's Well, c. 4000 ft.

Mohave Desert

No. 5958. Arabis glaucovalvula Jones
Mesa N. of Shaw's well
Sandy

No. 5959. Mirabilis Bigelovii Gray
Calyx pure white - Lobes broadly 2-lobed with pubescent tuft in notch. This note made in Coconino mts.
No. 5960. Astragalus tricarinatus Gray, bernardinus Jones.
Perennial. Sandy mesa
Shaw's Well.
No. 5961. Malvastrum
fls. apricot - yellow. like
no. at Ord Mt - but
smaller bld. Large fls
here - also. = Sphaeralcea ambigua
Gray.
No. 5962. Opuntia basilaris Engelm.
Old Woman Spgs.
Sandy mesa. fls rose-
red, large.

- We hazzled to Shaw's Well by the open valley mesa 2½. from Old Woman Spgs, turning through the low series of buttes which can be seen from the ranch house. From that point the almost-straight course changes to south and we hug to the right, passing two great "draws", like huge empty river beds with high banks - very interesting places. Then into another draw and (in its bed) follow up it through the sand a long distance. A hard pull which tired out the horses and us - and made us feel we were missing the right way. We were anxious

because all our water was gone except a little in the canteens. About ~~8:00~~ 7.20 we came in sight of the windmill which pumps water* from the bed of the draw into a cement tank for the cattle. Acacia greggii grows here. It is not yet in leaf except occasionally. It is one of the most annoying of desert shrubs because it look harmless but its claws are vicious*. [Cont. p. 98]

- Ericameria monactis McCl. (No. 5907).
- Acamptopappus sphaerocephalus Gray (No. 5898).

- Round-headed Rabbit Brush (No. 5898) leaves strictly erect along them. Narrow headed Rabbit Brush (No. 5907). leaves spreading-ascending or curved-ascending. The latter is the more beautiful

- One some-half miles s.e. of Shay's Windmill we stop to gather Gietta Grass (Pleuraphis rigida Thurb.) for the horses. It is a beautiful mesa adorned with the two species of Rabbit Brush (nos. 5898 & 5907. See p. 96 at foot.) in full flower which are very ornamental; Juniperus calif.; Yucca mohav. & brevifolia; Eriogonum polifolium; Lycium cooperi & andersoni*; Coleogyne ramossisma; Choya;

A line of small rocky buttes tops the S.W. horizon one mile away immediate while farther S.W. San Gorgonio, snow-mantled, crowns the lovely

* = L. pallidum, not andersonii.

Warren's Warrens Well c. 2500 ft.

prospect with a pleasant breeze stirring over the mesa. The lovely Calochortus kennedyi here & there rests on the ground as a wonderful spot of color against the grey sand.

— Warren's Well is a cattle man's station on the main road from Banning to Dale. There is a good supply of water and no charge is made for it.

— [Cont. from p. 96. Some time before we got within sight of the mill our horses, terribly worn and dejected, suddenly smelt water as borne on the evening breeze and the effect was an immediate rejuvenation of their spirits. The pace was perceptibly increased.]

✓ No. 5963. Opuntia ramosissima Engelm. Pencil Cactus, 4 ft. h.

San Bernardino Co.

✓ No. 5964. Euphorbia polycarpa Bth. var. tristella Boiss. Sandy mesas. Abundant 29 Palms.

No. 5965. Palafoxia linearis Lag. Wash. Coyote Holes.

✓ No. 5966. Asteliphanus utahensis Engelm. Coyote Holes. Sandy mesas.

✓ No. 5967. Eriogonum trichopes Sandy mesas. 29 Palms.

No. 5968. Achyronychia Cooperi Syn. mesa. 29 Palms.

✓ No. 5969. Piptocalyx circumscissus = Cryptantha (Torr. (Greeneocharis circumscissa Rydb.) 29 Palms. Sandy mesas.

✓ No. 5970. Viguiera deltoidea Gray var. parishii Rose. Rocky hills. Coyote Holes.

✓ No. 5971. Chaenactis Sandy mesas. 29 Palms.

No. 5972. Oenothera clavaeformis H. & A. var. decorticans Jepson. Sandy mesas. 29 Palms.

Warren's Well, c. 2500 ft.

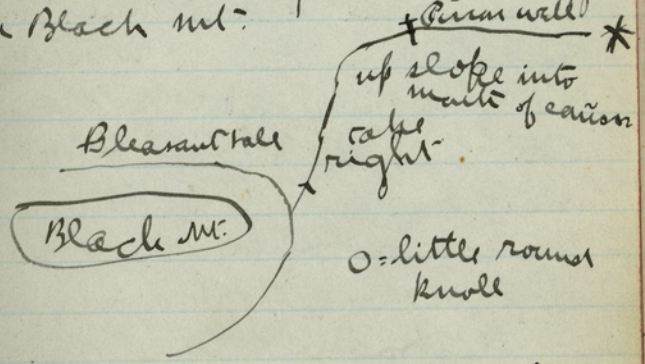
Received following directions at Warren's Well for road to Indio from Twenty-nine Palms:—
Climb up from 29 Palms to summit, then flat, then drop down into a deep valley = Pleasant valley, bear s.w. = due east & west, then in cañon west; general course = s.w.

Danger of getting off is on road to summit. Follow cattle tracks nearly to summit, then straight on up to summit. Cattle went to right, keep to left straight up to summit, then about on level southerly on summit. Look s. = Black Mt. running E & W., go round west pt of Black Mt a mile from it = little knoll of black lava little round knoll sets out by itself,

15 May 1914.

(1/4 mile around it = size of the knoll.)

Pleasant valley = south side of the Black Mt.



† Pinon Well = 1½ mile up from mouth of cañon.

✗ = County Well.

— Krameria parvifolia Benth. is a good browse; so said Swartout and I notice that the grey mare favors it. She stands by a bush nibbles a long time

3 miles E. of Coyote Holes
Mohave Desert

— Man in auto says:
8 miles up road from 29 Palms to Indio, take left hand, the right hand goes to Desert Queen, the next fork take right hand, goes to Pinon Wells. — Johnnie Wilson.

— Enogonum plumatella is in broad washes. Its branches are strictly erect from a woody trunk 4 to 12 in. h., the leaves not much reduced being protected by the compactness of the vegetative cylinder so to speak; but the infl. branches fork so divaricately and spread a a great deal. Those of one branch may almost come back on one another. This

might be called Elkhorn Enogonum or Elkhorn Weed

— Dalea spinosa ↑Gray. 4 mi. W of 29 Palms.
— Acacia greggii Gray.

No. 5973. Simmondsia chinensis (Link) C.K. Schneid. californica Nutt.
4 to 7 ft. h.
calyx 5-lobed. Stamens 8 (one count)
[Stamens, 10, 10, 10, 12. Find none 8. — W.L.J. Apr. '17]

— We camped tonight in a very broad wash where there was a great abundance of Gretta Grass (Pleuraphis rigida Thurb.) which our tired horses fed upon contentedly all night long. The clumps were 1 to 3 ft broad and 2 to 3½ ft high. Their inflorescence suggests a wheat head.

Twenty-nine Palms.

between 1800 & 1900 ft

– After a long and weary stretch of sandy mesa, up & down, but generally level, we finally passed the foot of a low hills and Twenty-nine Palms came into view two miles away, what a beautiful sight was the narrow strip of green in the desolation of the burning desert – willows, cottonwood, mesquite, their green crowns gladdening our hearts and rising above their crowns the slight columns of the Washington Palms. Billy McKenzie who lives in a cluster of little tents & shades here says there

are 15, I count 15 in the upper (eastern) Grove and one in the lower (western)

– There is good feed now 4 to 9 miles beyond Warrens Well (Gietta grass) and again 10 to 16 miles beyond. Within five miles of Twenty-nine palms it is desolate as to feed and even the bushes look scrawny and there is no Gietta Grass worth a horse's attention. Our desert-bred ponies are standing up well under the conditions going, we have left a portion of the sack of barley brought from Barstow and a very little of the alfalfa bale, but they like the Gietta grass and work well on it.

Twenty-nine Palms,
Mohave Desert.

- Tallest palm in eastern grove 70 ft. h., 8 ft. 4 in. circ.
another one 6 ft. 9 in. circ. and 55 ft. h.
There is only one small one which has its chaplet of leaves, that is dead leaves turned downward.

- Pluchea sericea is with the palms, the only place I have seen it since the Mohave River. It is a water indicator.

16 May 1914

There is no "dry lake" here as said by Mendenhall in "Desert Watering Places", but I can see a dry lake N.W. some six or eight miles. Now that I am higher I see a small dry lake, 10 acres, maybe a mile N.W. of the Palms.

- From Rabbit Springs and the Granite Mts. there is a broad valley running easterly, bounded on the south by the San Bernardino Mts. and the Cottonwood Mts, on the north by Goat Mt., Ord Mt., Bodman Mt., Clark or White Mt., Bullion Mts., Sheephole Mts etc. Of course the valley is not strictly continuous

being interrupted by low mesa rises which divide the dry lake basins and also interrupted somewhat or partially by low buttes or hills. But practically there is a great trough with the mts. on the north giving the effect at a distance of one range of overlapping ridges or mountain crests. The strongest interruption is between or near Superstition Cedar Stake and Shays Well.

Cont. from bottom p. 110. Hall, Comp. S. Cal. applies "Cottonwood Mts." to whole range as far as Morongo Pass which seems to me desirable. See his map. The extension of San Bernardino Mts. easterly into the desert beyond Morongo Pass, as in Mendenhall and others, very unwise.

No. 5974.
Char. shrub 4 to 6 ft. h. on alkali banks at 29 Palms.

No. 5975. Salix ~~nigra marsh.~~ goodingii Ball.
29 Palms.

No. 5976. Salix ~~exigua~~ Nutt.
29 Palms.

✓ No. 5977. Asclepias erosa Torr.
Cottonwood Mts. = Lookout Mt. near summit
3 to 3½ ft. h. See p. 112.

✓ No. 5978. Lycium Cooperi Gray.
Stems dark red & smooth, almost like a cherry, but mostly turning dark or black so that the char. red color is masked. Fruit with the constriction near top. Summit Cottonwood Mts. = Lookout Mt.

No. ✓ 5979. Rhus trilobata Nutt.
4 ft. h. amongst rocks, var. anisophylla Jepp. very showy. Summit Cottonwood Mts.

Not Cottonwood Mts.*

n. of Indio. = Lookout Mt. !!!

- We camped last night near the first summit of the Cottonwood Mts. Dry camp. There was no Gietta Grass, had been none since Twenty-nine Palms, we fed the Gietta Grass we had cut and in the morning the remnant of alfalfa hay and a feed of barley. Last night we drove until 7:30, dark, but the last mile the animals were so tired that it took a full hour to drag the load. Of course both of us walked.

---

* I apply this name to the range south of 29 Palms. Probably the Cottonwood Mts. proper are further east, N.E. of Indio, but apparently connected with this mt., that we passed over. Mendenhall, Desert Watering Places p.78, says of this mt. "unnamed". See p.108

17 May 1914.

- Chilopsis saligna, many sprawling or ascending stems from a common base, or erect, making a broad crown resting on the ground.
- Isomeris arborea, 3-4 ft h. very heavy with fruit and making a striking picture of laden pods.
- Acacia greggii Gray.
- Simmondsia californica Nutt.
- About 8 miles from Twentynine Palms we come to an unmarked fork in the road and are in great doubt. We take left hand for 1/2 mile. I stop & put horses to feed on Ghietta grass and Matthews goes on to find a reported sign board ahead. It is now 7:30 am. We broke camp and got off at 5:20 am.

↑ early

not Cottonwood Mts., c. 3000 ft.

cont. from p. 109. = Lookout Mt., n. of Indio.

No. 5977. Asclepias

Hoods horizontally truncate obtuse, the short sickle-shaped horns converging over center of disk and in shape like a stylar lupine keel. Fls. very pale cream color, i.e. nearly white.

No. 5980. Ausonia brevifolia Gray.

Summit Cottonwood Mts. = Lookout Mt.

No. 5981. = L. arizonicus Lupinus sparsiflorus var. arizonicus Det. C.P.S.

Summit Cottonwood Mts. = Lookout Mt.

No. 5982. Dalea Johnsonii Wats.

Summit of Cottonwood Mts. = Lookout Mt.

Very beautiful rich color

cf 6035

- Juniperus

3 ft. diam. trunk at ground not counting some horizontal branches that originated there 24 ft. crown; 13 ft. h.

17 May 1914.

Riverside Co.

- Road is right one, and we drive over a high flat of the mt. pass and turn midst rock piles westward over a lovely mesa of Yuccas where we have a view of a great dim bowl surrounded by desert mountains lying below us south east. There was the usual brush, creosote, bladder sage etc. We came on down several miles toward Pleasant Valley, the sloping mesa more and more diversified with strange uplifts of great rock blocks piled and + tilted on one another. Round one one of them we came upon a lovely slope with great yellow strands of Cassia armata flung down it. It was very fine. Desert animals live in these rock buttes. We heard strange complaining sounds, as of young birds complaining for food. The sound issued from a cleft in a a great bowlder as big as a house and proved to come from bats. Cont. p. 126

 not Cottonwood Mts., c. 3000 ft.

n. of Indio. = Lookout Mt. See L. E. Carpenter of Indio in litt. Jan. '18. Also cf. p. 110 supra.

No. 5983. Gilia aurea Nutt.
Cor. clear lively yellow; style branches 3, horizontally spreading. Tube cor. dark-purple away down. Sandy wash. Pleasant Valley
= Linanthus aureus (Nutt.) Greene.

- Pholisma arenarium. Abundant through all this country.
- Franseria dumosa has disappeared (Piñon Well).
- Mohave "China Rice Grass coming in here last 3 years plenty, can almost mow it in Pleasant Valley" - Man at Piñon Well.
= Oryzopsis hymenioides Ricker.

May 17, 1914.

No. 5984. Lotus rigidus Greene.
Shrub 1½ to 3 ft. h. Banner ½ longer than wings, wings ½ longer than keel (twice longer beyond calyx). Cor. yellow, turning to brown-purple, the banner changing last, much later than the other parts which change together. Summit Cottonwood Mts.
= Lookout Mt.

No. 5985. Ericameria cuneata var. spathulata, Hall.
Dark green shrubs 2 to 4 ft. h. in clefts of rocks on south slope of Cottonwood Mts. towards Pleasant Valley.

No. 5986. Eriogonum fasciculum var. flavoviride
1 to 1½ (or 2) ft. h. Heads very numerous, bunches compact, herbage stem very green, light bright green. There are the particulars in which it differs from the ordinary form. Piñon Well

Piñon Well Grade, c. 2500 ft. 18 May 1914

N. of Indio. Not Cottonwood Mts.

Riverside Co.

Pinus monophylla tree 25 ft h., 6 ft. 4 in. in circ at 4 ft.

No. 5987. Eriogonum inflatum var. inflatum Piñon Well.

No 5988 Purshia glandulosa Curran. 4½ ft. h. + twice as broad. Dense. West slope. mts. of Piñon Well.

No. 5989. Baccharis sergiloides Gray. "Squaw water weed" says the man at Piñon Well who regards it as a water indicator. Healso says mesquite (Prosopis juliflora) is a water indicator. Piñon Well, in stream bed.

No. 5990. Ephedra californica Wats. Piñon Well.

No. 5991. Plantago Xerodea Morris. Piñon well.

No. 5992. Chorizanthe thurberi Piñon Well.

Condalia parryi Weberb.

No. 5993. Condalia Zyzyphus parryi Trees Stems spreading 4 to 8 ft. h. Trunks 2 or 3 to 8(!) in. diam.

No. 5994. Salvia not Gilia Bigelovii Gray. Piñon Well. = Linanthus dichotomus Bth.

No. 5995. Eriophyllum wallacei Gray. Compositæ. Piñon Well.

No. 5996. Festuca pacifica Piper. Grass. Piñon Well Det. A. S. H.

No. 5997. Hymenoclea salsola T. & G. Char. Compositæ of sandy mesas & washes

No. 5998. Salvia vaseyi (Porter). 2 ft h. Corolla white, with short notched upper lip and rounded lobes lower lip longer, spreading, the middle lobe developed into a transverse oblong structure which is notched and which covers the short lateral lobes in such a way as to nearly conceal them.

Piñon Well Grade, c. 2500 ft. 18 May, 1914.

n. of Indio. Not. Cottonwood Mts. = Conchilla Mts.

No. 5999. Chelopsis saligna Don Calyx inflated, minutely 5-toothed and slit down the lower side. Corolla pink, Mimulus-shaped, the long throat curving horizontally from the short tube but no sharp distinction recognizable between the two except insertion of the 4 stamens. Trees, sprawling clumps, stems 2 to 10 in. in diam; 8 to 14 ft h.

No. 6000. Phoradendron folleanum Eichler ssp. densum (Torr. ex Trel.) Wiens On Juniperus no. 6035

No. 6001. Quercus dumosa Nutt. Piñon Well Cañon.

No. 6002. Thelypodium integrifolium Endl. Piñon Well Cañon. Doubtful det. = Streptanthus hallii (Payson) Jepson.

Riverside Co.

No. 6003. Gilia pungens Bth. var. hallii (Millikin). = Leptodactylon Mts. of the Piñon Well. Fine clump 20 inches high, very woody at base and very "stickery". Piñon Well Cañon.

No. 6004. Arctostaphylos glauca Lindl. Shrubs spreading, 2 to 4 ft. h. Berries elliptic and somewhat acutish; skin very viscid; stone solid.

No. 6005. Astragalus oocarpus Gray. A. palmeri Gray Stems sprawling + forming a mat in stream bed.

No. 6006. Oenothera bistorta Nutt., var. hallii Jepson. Prostrate. Stream bed

No. 6007. Pentstemon eatonii Gray. Summit* Piñon Well Cañon road

No. 6008. Baccharis sarothroides Gray Char. shrub of stream beds, 3 (to 4) ft. h.

* betw. Piñon Well and County Well

n. of Indio. (Not) Cottonwood Mts.

No. 6009. Mentzelia involucrata Wats. Bracts closely subtending fls, broad, white-centred with only a deeply laciniate margin green. Cor. pale cream with a tinge of crimson in centre mere

No. 6010. Philibertia hirtella Parish. Runners running out over the sands in washes, very slender, the nodes very remote, 5 to 10 ft. long!

No. 6011. =Dudleya Cotyledon lanceolata B. & W. West slope beyond Piñon Well.

No. 6012. Brickellia atractyloides Gray Comp. 12-15 in. h. Rocky stream bed,

No. 6013. Cryptanthe racemosa Greene. Rocky side of stream bed. Cryptanthe. Fls. white. Very prickly, its bristles small,

very penetrating, like the small spicules on cactus species. Plants depressed-globose, very dense, the stems and branches numerous and intricately interwoven in growth, like Eriogonum nidularium, so that it is impossible or at least impracticable to separate a portion for a specimen without considerable tearing.

No. 6014. Viguiera deltoidea var. Parishii Rose Rocky wall, side of stream bed. Rays golden yellow.

No. 6015. Mohavea viscida Gray. West slope, in stream bed, west of Piñon Well.

No. 6016. Hyptis emoryi Torr. Many stemmed clumps with tall (4 to 8 or 12) ft. h. slender stems,

County Well (Cottonwood Mts.) on grade from Piñon Well to Indio.

No. 6017. Eriogonum inflatum var. inflatum
Stream bed near County Well.
I took this because it seemed different from the plant of the Mohave Desert or even of Piñon Well.

No. 6018. Mirabilis Bigelovii Gray
Rocky cleft. Plant 18 in. h., clumpy. Nyctag.

#6020 mounted 5/3/55 but #6019 made a duplicate

No. 6019. Trixis angustifolia DC. var. latiuscula Gray
Comp. Bushy plant. 2 ft. h. Perennial.

No. 6020. Trixis angustifolia, var. latiuscula Gray.
Comp. Bushy plant. Perennial
Stems many from base, whitish-brown, 16 in. h.

No. 6021. Acacia greggii Gray.
Flowers fluffy cream-yellow.

c. 1000 ft. May 18, 1914. Riverside Co.

No. 6022. Hofmeisteria pluriseta Gray.
Roundish bushy Comp, 18 to 24 in. h.

No. 6023 Peucephyllum Schottii Gray
Very dark green roundish bushes 4 ft. h, on lower part of rocky wall of cañon

No. 6024. Bebbia juncea Greene.
Comp. of rocky stream beds — 1½ to 2¼ ft. h. Broad but roundish headed bushes

No. 6025. Eriogonum thomasii Torr. ~~delicatulum~~
Stream bed

No. 6026. Cryptanthe angustifolia Greene.
Stream bed.

No. 6027. Gilia latifolia Wats.
Corolla-lobes ovate, broader at the middle than at base, acute, spreading horizontally from tube, pink (Erythraea color). Whole herbage very sticky. Stamens

County Well, (Cottonwood Mts.) not on Road from Piñon Well to Indio

unequal, 3 long and 2 short. Style very shortly 3-cleft. Calyx tube scarious between the angles. All flower parts glabrous except the calyx glandular with gland-tipped hairs.

No. 6028. Physalis crassifolia Benth. Stream bed; branches on the ground.

No. 6029. ~~Malvastrum~~ Color cor. same as Ord Mt. one. = Sphaeralcea ambigua Gray.

No. 6030. Asclepias subulata Dec. Hoods scimitar-shaped, i.e. with the sides pressed together like two a Lupine keel, the horn a broad thin body with a short point lying between the two

c. 500 ft. May 18, 1914. Riverside Co.

parts and with the tip barely protruding. — Hills near Indio. Like a rush in habit.

No. 6031. Chrysothamnus paniculatus Hall. Forming large clumps 4 to 5 ft. h. Comp. 4 ft. h. with many stems from base.

No. 6032. Hymenoclea salsola T. & G. Comp. Stream-bed species. 3 ft. h. [Corollas 4 (or 5 !) - lobed. Involucre thin bowl-shaped or broadly turbinate, with 5 broad teeth. Flowers 7, 7. Bracts obovate, ciliate-erose.] Ø heads

No. 6033. Opuntia bigelovii Engelm. Like a choya, but very "fat" and with comparatively few stems and branches. A "fat-boy" Choya. 3-4½ ft. h. (Det. S.B.P.).

No. 6034. Pinus monophylla Torr. & Frem. Piñon Well cañon.

No. 6035. Juniperus californica? mostly 5 to 8 feet h. and half again as broad. Piñon Well

Riverside Co.

No. 6036. Juniperus californica Wats.? not showing seeds as in previous number. West of Piñon Well.
– Cont. from bottom p. 113. The road runs down and across the upper end of Pleasant Valley, which lies east & west, and after reaching the south side of Pleasant V. turns directly west into the mouth of a cañon. About 2 mi. up this cañon we find Piñon Well, a rather pleasant cañon spot, with good water. The old stamp mill of the Piñon mine is here. Up the cañon a short distance comes in Juniperus californica and Pinus monophylla. Towards the summit the sharply cleft backbone is pleasingly and rather thickly sprinkled over, even to the summits, with Pinus monophylla, Juniperus californica and the prevailing shrubs. At the summit is a fine view of the snow-lined top of Mt. San Jacinto, while further to the left is the blue top of Santa Rosa Mt. We go down into a cañon and for six or eight miles have very fine botanizing, more specimens being collected, than on any other three or four days since I have been out. We come to County Well, a bucket and a pulley being used to lift the water, take a good long noon; proceed slowly and yet more slowly; stop for supper and to feed horses at last summit of the hills near Indio and after the supper rest drive on into Indio where we arrive at 12:30 am.

May 19-20-21, 1914.
Indio.

-A man of 35, sunburned, lean but muscle-hardened and athletic touched me on the shoulder as I came out of the grocery store and said he was a former student of mine, back in 1901, 2.E. Carpenter. Student of the Coll. Agr. He was the only grad. in that year, studied pharmacy and medicine, but for his health came here to the desert and has 1000 A. land. Pumps 400 gal. a min. for 10 hrs at cost of $6.00 per day. Lift of 96 feet. He reminisced a great deal about his student days at Berkeley and said: Oh, if I had only put in my time properly. I loafed the first three years, did some work the fourth year - But if I had only buckled down!!

This is a story I often hear from former grads. Interestingly enough he has a very different opinion of me now from 1901. He sees now that I was tremendously interested in his welfare. Then he thought that there was "something the matter with me"!!

Indio Alt. 25 ft.

Sphaeralcea emoryi Torr. ssp. variabilis (Kell.) Kearn. Jeps.

No. 6037. Malvastrum Sphaeralcea ambigua var. californica

Petals same color as Ord Lot., no. 5856., but less red in it, i.e. paler. Petals 4 lines long, the fls. comparatively small.

no. = S. fendleri Gray var. californica Parish.

No. 6038. Atriplex lentiformis Wats.

Splendid bushes 7 to 10 ft. high and 9 to 15 ft. broad!

Fruits there.

No 6039.

Camp. One of the 2 or 3 most common bushes on the flats northerly from Indio. 1½ - 2½ ft. h.

No. 6040. Dalea schottii Torr.

Thousand Palms Comm. Bush 4 ft. h. Dry gravelly mesa Palm Canon next east of. May 22

Indio to Thousand Palms.

– Washingtonia filifera.
Just north of Indio, along
face of foothills
east to west

1. Cluster of 6 palms
2 " " 3 "
3 " " 35 "
4 " " 85 "
5 " " 15 "
6 " " 20 "

" = 6 clusters of 10 to 20
each (!)

7 Two clusters close together
separated by a small
sharp divide, c. 40 in each
8. Sever or 8 down on flat
in front of no. 7.
9. Hidden in cañon on hill
slope, perhaps 40 or 50.
10. Pushawalla Cañon, 75 palms

Cañon, 22 May 1914.

– Prosopis juliflora var. glandulosa.
3 trunks sprawling
1. 2 ft. 5 in diam at 2 ft
2. 1 ft 7 in " " 3 ft
3. 1 ft 3 in " " 1½ ft

Height = 37 ft.
Breadth of circle = 114 ft.

– Atriplex polycarpa
= Comp. no. 5939
– there two prevailing "sage-brush" N.W. Indio
– Pluchea sericea.

— Pulled across country by devious sandy rutted roads which finally ran out into washes, thence up shallow stream beds and finally up over rocky mesa, without roads of course and pulled into a palm grove which we had seen for some miles in the mouth of a cañon. Here we cooked dinner and ate it in the shade of these royal trees. Was splendidly set off their surroundings, the magnificent distances across the valley and the purple mountain ranges fading into hazy nothingness. This is a very beautiful spot. A steady wind

rustles the great leaves of the palms and one is in a whole grove as in a forest top. A royal tree - with ample circumstance of space. Think what one of a palm in a 10 x 8 city lot! How out of keeping. The grove just described is the one next after No. 10 noted on p. 130. Probably all the estimates are too low, as these groves are seen from the valley. No 6 showed probably read as 20 to 50 in each cluster. These groves seem mostly at the base of the foothills where the foothills join the tilted mesa.

Just east of mouth of cañon where we have lunch is a dry wash ending abruptly 1/2 mile up

along the face of the bank of the mesa slope in a horizontal band — straight as a string grow a line of palms which I photograph. It is remarkable how straight they are disposed.

- Atriplex hymenelytra.
- Acacia greggii

Juncus acutus L. Det. F.H.C. acutus var.
No. 6041. Juncus sphaerocarpus Engelm.

Cañon next east of Thousand Palm Palms Cañon where we had lunch.

- Sporobolus airoides. Same sp. as at Barstow and Independence. Horses had a fine time on the heavy clumps in the Palm Cañon just east of Thousand Palm Cañon.

- went up into One Thousand Palms Cañon. Beautiful running streams of water. Camped at lower point of grove, but tramping around soon spied the fine cienega in the arroyo between 1/5 mile above, towards upper part of lower grove. This proved a beautiful little green world and we moved up there — the valley — like floor of the arroyo was all green with salt grass (Distichlis spicata), Arundo no. 6044 and sedges. The horses had a fine time. The immediate valley was marked by the lofty heads of palm trees while a mesquite-covered and dune suggested new growth of blue blossom ma

Mendocino hillside. It was a beautiful spot in a desert land. Grass, water, wood and just beyond the vast ghastly mystical desert ranges.

In Palm Cañon there are, roughly estimated, about 350 trees in lower grove and 220 in upper grove, ½ mile N., and maybe 20 in all in a scalped lot to the east of lower grove, say 600 in all. At Willis's settlement there are about 275. Edom Station, Blodgett S. P. is about 3 miles west of south of Willis' ranch.

No. 6042. Cyperus laevigatus L.
Side of shallow streamlet in Thousand Palm Cañon

No. 6043. Elocharis capitata R. Br.
With preceding.

Riverside Co.

Washingtonia
Leaves 3 to 5 ft. 7 inches long as to petiole. Blades 2½ to 3 ft.

No. 6044. Phragmites communis Trin.
Cane in Thousand Palms Cañon. The horses eat it a little but prefer the distichlis spicata which is young & fresh.

No. 6045. Washingtonia filifera. (glutinosa Jepson)
Thousand Palms Cañon.

No. 6046. Larrea tridentata Cov. var.
Roots spread out on surface, 5' to 25 feet from individual, size of a thumb to a cord and when uncovered in a wash by wind or water action resemble a gigantic spider's web.

= Coachella Valley

Conchilla Desert

Riverside Co. c. 200 ft.

No. 6047. Euphorbia eremica Jepson n. sp.
Trailing. Glands 4, petal-like, whitish, oblong with a notch at apex, bearing a central yellow gland with a slight raised border. Stamens with divergently spreading anther-lobes, 5 or 4 & an ovul.

We are now pulling across the sands of the Conchilla Desert and it is very slow and very hard on the animals. The sand is deep and runs on the wheels. The vegetation is scant as well it is for as there was, evidently, considerable annual vegetation. Larrea tridentata is the prevailing species now. Here is Euphorbia no. 6047,

May 23, 1914

Composite no. 6048, and a grass no. 6049.

Harv. & Gray.

No. 6048. Baileya pauciradiata Composite. Common on Conchilla desert.

No. 6049. Panicum urvilleanum Kunth. Grass. Conchilla Desert, common. Det. A. S. H.

No. 6050. Atriplex canescens but the shrubs a rather dark green - so much so that I did not recognize them until I saw the fruit. 4 to 6 ft. h. roundish, densish. Near Palm Springs.

No. 6051. Abronia villosa Wats.
Fls. pink purple. annual. I see no dif. betw. this and plant taken from Barstow. Conchilla Desert.

Conchilla Desert

=Coachella Valley

Riverside Co. c. 200 ft.

No. 6052. Conchilla Desert.
Encelia eriocephala Gray.
Common on the sand-dunes.

No. 6053. Achronychia cooperi
Conchilla Desert. Sand-dunes.
Decumbent or prostrate; calyx tube becoming a little unshaped, this and the 5 lobes fleshy-herbaceous, i.e. green, each lobe abruptly tipped with a white appendage like a staminodium. Cont.

No. 6054. Euphorbia polycarpa Bth. (p. 146)
Sand-dunes, Conchilla Desert
var. hirtella Boiss.

No. 6055. Amaranthus californicus Wats.
Ovary or fruit somewhat distended at top and wrinkled
Common, Conchilla Desert.
Prostrate

No. 6056. Mentzelia dispersa Wats. ~~albicaulis Dougl.~~
Conchilla Desert.
no! = M. dispersa Wats.

No. 6057. Helianthus petiolaris canescens
Conchilla Desert. Rather common.

No. 6058. Stillingia annua Muell
=S. spinulosa Torr.
Fls. in a bisexual spike, the female at base and few. Staminate flowers with 4-parted scarious calyx and two stamens, the anthers with two broad somewhat slightly divergent lobes. This flowers is in the axil of a scarious bract and laterally subtended by two stalked glands. The pistillate flowers are likewise guarded by two laterally placed glands; these glands are trumpet-shaped rather and the ♂ ones are smaller editions.

— Called on Dr. Murray. He is now 83, white-haired and with a very prominent nose. He is a Scotchman, born in Edinburgh and went to Edinburgh Univ. if I understood him correctly. As a printer boy the sheets of Hugh Miller's Testimony of the Rocks passed through his hands and a friendship developed as Murray grew to a man between him and Miller. Murray's father and grandfather were lawyers, the grandfather being Lord ——— ———, a legal title and not hereditary. (an judicial) Murray knew the botanists well and thought very highly of Balfour and Balfour's kindly ways with

his students. Then there were ——— and also ——— who wrote the articles for the ——— edition of the Encyclopaedia Britannica, which Murray handled. → the sheets of Great names were connected with this edition; Macaulay wrote the historical articles, Herschel the astronomical, Fraser the ——— Then was no question but of having the best, and the greatest names for the Encyclopaedia. This edition was gotten out by Adam Black —×

Murray was the first settler at Palm Springs as he had been the first at Banning and Beaumont. One of the Balfours came into his study to talk with him about a

contested water right and saw hanging on his wall the picture of Murray's uncle Guthrie. He exclaimed at sight of the picture and a friendly footing was established instead of a contest as a result of this incident.

Says Murray: The Palms like, must have, three things; sun heat; moisture; alkali. He is tremendously fond of the Palms here and talked a good deal about them.

He lost his wife two years ago and feels the blow very keenly. They were married in Edinburgh (?5-1) years ago. "She has been to me a constant vitalizing force. She had faith. I have

little. She was a constant uplift to me, an inspiration and resource."

I found him in a pleasant cottage with most comfortable surroundings.

What an example he is of the Scotch! Of those who go forth to the ends of the earth and everywhere leave their mark in all lands.

- Cathedral Canon, Dr. Murray named after Greyfriars in Edinburgh.

cont. 6053. Stamens obscure, flowers apparently past anthers, but remnants of them about 12. Ovary one, one-celled, one-ovuled.

No. 6059. Oligomeris linifolia McB. Indio.

No. 6060. Psorothamnus ~~Dalea~~ var. emoryi Emoryi Gray. (Det. R.C. Barneby, 1967)
Keel longest, wings shorter, banner scarcely or just equalling wings. Wings and banner each with a slight notch and a glandular mucro in it. Many-stemmed shrub 1 to 2 ft.-h. Flowers purple, instantly staining hand & paper yellow.

May 24, 1914

No. 6061. Pectis papposa Harv. & Gray. Comp. Palm Sprs. Irrig. ditch side

No. 6062. Cryptantha angustifolia (Torr.) Greene. Common on mesas. Sand. Horses eat it. Palm Sprs.

No. 6063. Gilia virgata Stend. var. floccosa Millikin. = Eriastrum eremicum (Jep.) Mason
Fls. lavender. Sandy mesas Palm Sprs. = Hugelia eremica Jepson.

No. 6064. Asclepias erosa Torr. 3½ ft.-h. Clumps of it. Palm Sprs.

San Gorgonio Pass

1700 ft.

Riverside Co.

Yucca brevifolia
mohavensis
Trunks 3 to 14 in. diam. at one foot above ground. Plants 4 to 10 ft. h. – San Gorgonio Pass

?
No. 6065. Chorizanthe staticoides Benth.
Sandy mesa

No. 6066. Eriogonum fasciculatum var. poliferum
Green form with peduncles & inflorescence genally very unequal in height & size.

No. 6067. Eriogonum fasciculatum var. poliferum
Gray form, very distinct in the field; infl. mostly capitate, the heads nearly of regular size and in peduncles of equal length. This latter is the more common, is the abundant form, and is a shrub of more regular outline than the former. Cont.

– acacia greggii, frequent.
– Round headed Rabbit Brush, the stems very woody below which, 1/2 to 1 or 1 1/2 inches.

Cont. no. 6066. The gray form is far more abundantly floriferous. The green form looks green in the field. You do not see the gray-under-side of the leaves. But made into a specimen, I do not recognize it as the green form, it shows so little green.
– All the way through the Pass the view is dominated by the lofty summit of Mt. San Jacinto which rises high overhead on the South; its rocky steams flecked with snow. It is a fine sight and one's eyes constantly comes to its inspiring front.

San Gorgonio Pass 1800 ft.

No. 6068. Yucca mohavensis Sarg. = Y. schidigera Roezl.
See note on p. 148.

No. 6069. Cotyledon lanceolata B. & W. = Dudleya
In protection of Acacia greggii and Larrea.

No. 6070 Lamarckia aurea Moench.
Habitat same as 6069.
Grass. Det. A. S. H.

No. 6071. Philibertia heterophylla Jepson.
Habitat same as 6069.

No. 6072. Gilia virgata Stend. = Eriastrum sapphirinum ssp. dasyanthum
Cor. sky-blue. Common in this locality. = Var. dasyantha Brand.

No. 6073. Mirabilis Bigelovii Gray
Calyx pink or very pale sometimes, i.e. nearly white.
Habitat same as 5969.

No. 6074. Chaenactis
Sandy mesa near Banning.

25 May 1914

Riverside Co.

No. 6075. Chorizanthe parryi
Stems spreading horizontally and as if prostrate or reclining but truly not so.

No. 6076. Gilia pharnaceoides Bth.
Near Beaumont. = Linanthus liniflorus Greene.

No. 6077. Eschscholtzia californica Cham.
Beaumont.

No. 6078. Erigeron foliosus Nutt.
San Timoteo Cañon Riverside Co.

No. 6079. Peucedanum Vaseyi C. & R.
San Timoteo Cañon.

No. 6080. Orthocarpus purpurascens Benth.
Looks rather different from our common northern form. (San Timoteo Cañon

No. 6081. Calochortus splendens Dougl.
Grassy-shrubby hillslope. San Bernard Co.
Per. lavender. San Timoteo Cañon.

No. 6082. Delphinium parryi Gray
San Timoteo Cañon

No. 6083. Dicentra chrysantha Hoa
4-5 ft. h. San Timoteo Cañon

Banning Riverside Co.

No. 6084. Cryptantha intermedia Greene. Only half-plant taken.

No. 6085. Astragalus pomonensis Jones. Stems many from base decumbent, or prostrate with ascending or erect ends. Fls. white!

No. 6086. Lupinus densiflorus Bth. Fls. white. Hillside. Note that the central axis first flowered, that the stem was simple and flowered and matured its fruit on the basis of the leaves upon it, that the inflation of the central axis probably came later when there was proliferation of leafy-based flowering stems from beneath the fruiting raceme.

25 May 1914.

— Banning is an attractive town in the pass, clean, well built and with fine orchards of apricot and peach surrounding it. We came on west two miles and looked out over the Beaumont county, orchards to right, to left a gentle hill slope, all straw-yellow, with grain, in the late afternoon sun, — a beautiful sight, that kind of wonderful light soft tan-color when the grain is nearly ripened. We bowled on down a half mile to a small arroyo, camped on its bank and cooked supper in the arroyo. We went on next morning at 5 a.m.

- Beaumont was projected on a boom scale, its wide plan giving room for a great deal of filling in. Passed on down into San Timoteo Cañon which is a very interesting road all the way to Redlands when we passed under the south side of Smiley Heights. /

At ~~Indio~~ Palm Springs three nights ago as we came into the village a family caravan stopped by an irrigating channel to water. There was a large freight wagon with 4 horses, the two wheel-horses being Norman stock. Behind were two led animals and a small road-vehicle with one horse following. The driver was a strapping fellow whom I thought heavily sun-burned but he was probably half-Indian. His wife and the four children were plainly Indian, the full blooded. He was good-looking and she had a rather strong and good face. She rode with the man and two tots scarcely able to see over the dash-board drove the one horse. We saw them at intervals along the road and were surprised on passing Redlands to see them in the main road ahead of us, in spite of the fact that we had a light outfit and drove at a trot. His animals were good walkers

but above this was the man. He took good care of his beasts and kept steadily and persistently on, wasting time nowhere, so that this little caravan, forging across country with a fixed determination, awakened my admiration and interest. It is seldom, indeed, that one sees such traits, in this way, so plainly exhibited by the native tribes.

In San Bernardino camped in the backyard of the Parish's where we were most hospitably received by Mrs. Parish. Mr. Parish has just gone into the Mohave Desert on a botanical trip with McDougal of the Desert Laboratory.

San Bernardino

May 27, 1914.

No. 6087. Cucurbita foetidissima H.B.K.
San Bernardino.

No. 6088. Pentstemon antirrhinoides Benth.
Cor. clear yellow, throat open, 3 lower oblong lobes equal, spreading; upper lobe incurved - arched with a strong rib on back and very slight notch.
Shrub, 2 1/2 ft. h., evergreen!
San Bernardino. 1700 ft.

No. 6089. Chorizanthe staticoides Benth.
San Bernardino 1700 ft.

No. 6090. Pentstemon spectabilis Thurber.
Purple-blue cor. + fleshy leaves. Woody at base.

No 6091. Oenothera bistorta Nutt. 1800 ft.
Sandy flats.

No. 6092. Helianthus annuus

May 27, 1914 Cajon Cañon.
San Bernardino Co. 2200 ft.

4 to 8 ft. h., covering several thousand acres at entrance Cajon Pass, really Cajon Cañon

No. 6093. Juglans californica Wats.
Stems 12 to 22 ft. h. in clusters along streams or in flats of streams. Cajon Cañon

No. 6094. Mentzelia micrantha T. and G.
Fls. very much clustered. Stems and branches very brittle, also the leaves. Cajon Cañon.

No. 6095. Phacelia hispida Gray.
In shade of Juglans. Leafage only.

No. 6096. Emmenanthe penduliflora Bth.
Sandy flats.

No. 6097. Cryptantha muricata Nels. & McBr.
Sandy flats Var. jonesii Ttu.

No 6098. Antirrhinum coulterianum Benth.

Cajon Pass

really Cajon Cañon.

— Cercocarpus parvifolius to 16 ft. h. — Cajon Pass

— Eriogonum fasciculatum, green form, the only one about San Bernardino.

— The tall wands of the White Sage (Salvia apiana) now in full flower, rise in multitudes everywhere in the mesas and hillsides. They are 5 to 6 and even 8 feet high and with the Yucca Whipplei adorn the entrance to Cajon Pass, the latter species showing its ball of white candles everywhere in the river bottom.

May 28, 1914.

— Camped in an ideal spot in the Cajon. The cañon is a narrow valley here bounded by the chaparral-covered hills. The very gentle slope of the valley on the opposite side, across the river is a flowery garden beautifully and tastefully diversified by shrubs of various species, these latter melting above into the chaparral. We have wood and good grass for the horses. A little streamlet of mountain water gurgles past, and the quail call contentedly or excitedly in the thickets behind us. Wild Grape*

* Vitis girdiana Munson.

Cajon Pass

is in flower, as likewise the clumps of Sambucus glauca while along the streams grows clumps of Juglans californica.

really Cajon Cañon.

28 May 1914.

Cajon Pass

2400 ft.

No. 6099. Calochortus splendens Dougl. Per. lavender. Inner segs. with an oblong felty gland at base of the fan-shaped petal, a few short cuneate scattered hairs just above it. Anthers lanceolate, olive-brown. Sandy flats.

No. 6100. Asclepias eriocarpa Benth. Hoods roundish, truncatish at top, as if closed, but with a narrow slit for extrusion of the slender horn, only the subulate tip of which is extruded and which scarcely equals the rim of the stylar column. Flowers whitish with a pink umbre flush about lower portion of hoods. 14 to 20 in h. Leaves in 3s or 4s.

28 May 1914

Sec. Bernardino Co.

No. 6101. Frasera parryi Torr. Petals whitish, dotted with black, glands horse-shoe shaped with the opening upward, the margin bounded all around with a fence of subulate hairs. Ovary black-dotted. Style one; stigmas 2, small; roundish.

No. 6102. not used.

No. 6103. Phacelia distans Bth. acc. R.F.H. hispida Gray. Stems often many from the base and forming a large bushy-branched plant 16 to 24 in. h. Cor. blue, the scales in throat with ruffled or convoluted border where diverging in pairs from stamen filament, but the tips narrow, decreased and not free. Style deeply parted, its lower portion slightly hairy. Anthers brownish. Stamens & style exserted.

Cajon Pass 2400 ft.

No. 6104 Phacelia brachyloba Gray. Cor. clear pink-lavender with yellow eye (throat), the throat very open. Style very shortly 2-branched (not cleft), the branches cylindric and stigmatic at tip only; lower portion of style hairy. Throat without crests but an oblong-obovate areola behind each stamen, two more between each of these, the pair being smaller and somewhat in relief, distended inwards a very little. Anthers brownish or reddish. Stamens & style included.

San Bernardino Co.

No. 6105. Elymus condensatus Presl. Grass 5 to 6 ft. h. Det. A.S.H.

No. 6106. Mimulus brevipes Benth. The most handsome of Mimuli; a luxurious look.

No. 6107. Bloomeria aurea Kell. Clear yellow perianth. B. crocea Cov.

No. 6108. Collinsia tinctoria Hartw.

No. 6109. Asclepias californica Greene. Stems decumbent.

No. 6110. Dendromecon rigida Benth. Petals 5!!! in all fls. examined.

Cajon Pass

—From the summit of the Cajon Pass the view is very fine, especially southwesterly. As we looked back, just after sunset, each ridge was strongly individualized, and the warm purple glows carried the eye as in delight to the snowy summits of the San Antonio crest and the neighboring ridges. It was a very fine picture.

No. 6111. Phacelia fischida Gray. Strictly annual root, cor. very large, light lavender. Scales with "edge of ruffle" crenulate, the tips acute, not free. Style cleft half-way, glabrous. Ovary with very long

straight vertical hairs! !

No. 6112. Prunus ilicifolia Walp.
Bushes 8 ft. h. very flori-
ferous.

No. 6113. Lupinus concinnus Agardh.
very peculiar

No. 6114. Arenaria macradenia Wats.
Stamens 10; petals white; style
short, very shortly 3-cleft at
apex.

No. 6115. Lotus grandiflorus Greene var. mutabilis Ottley.
Fls. egg yellow Decumbent.

San Bernardino Co.

No. 6116. Asclepias vestita H.&A.
Stems several from base
decumbent, or trailing with
merely ascending ends.
Var. parishii Jepson.

No. 6117. Baeria

No. 6118. ~~Gilia~~ parryae Gray.
White-fld. abundant on sandy
spots. = Linanthus parryae Greene.
open

No. 6119. ~~Baeria~~ Microseris linearifolius

No. 6120. Gilia brevicula Gray.
Fls. lavender-crimson.
= Linanthus breviculus Greene.

No. 6121. Juniperus californica Carr.
6 to 12 ft h. c. 3800 ft.

No. 6122. ~~Echinocystis~~ Marah macrocarpa Greene.
climbing high over Aureus
dumosa, its fruits hanging

Near Cajon Pass c. 3500 ft.
on desert side

pendulously from the branches like the tropical. See print in box.

No. 6123. Ericameria monactis Composite. A few rays! Shrub 2 1/2 ft. h. to 3 1/2 ft.

No. 6124. Arenaria Douglasii Fenzl. RC.B. 5/19/59

No. 6125. Caubya candida Gray.

No. 6126. Piptocalyx circumscissus = Cryptantha Torr. = Greeneocharis circumscissa Rydb.

No. 6127. Eriophyllum pringlei Gray. Comp.

No. 6128. ~~Gilia mathewsii~~ Gray. = Langloisia matthewsii Greene.

No. 6129. Gilia ochroleuca Jones ssp. bizonata A. & V. Grant Blue-fld

No. 6130. Pectocarya setosa Gray.

San Bernardino Co.

No. 6131. Gilia dichotoma (Bth.) Linanthus dichotomus Fls. pure white on inside, opening or at least open in evening, closed the next morning.

No. 6131a. Gilia parryae Gray.

No. 6132. Audibertia incana Benth. var. pilosa Gray. = Salvia Dorii Deep blue flowers. Shrub 16 to 30 inches h. ~~= Salvia carnosa Dougl. var. pilosa (Gray).~~

No. 6133. Castilleia plagiotoma Gray. Perennial! Undoubted woody crown. Cont. on p. 178.

No. 6134. Chrysothamnus nauseosus (Pall.) Britt. var.? Shrub 6-7 ft. h. Roundish-bushy.

No. 6135. Artemisia tridentata ~~Nutt~~ tridentata Abundant. 2 to 4 ft. h.

No. 6136. Salazaria mexicana Torr. Fls. white on the upper lip

with a faint tinge of lavender

No. 6137. Juniperus californica Walt.

No. 6138. Mirabilis Bigelovii var. aspera
Fls. pale pink. Stems trailing or sometimes ascending. Fls. fading red, or drying immediately.

No. 6139. Tetradymia axillaris A. Nels. ~~spinosa A.A.~~
Comp. Bush. 2 to 2½ ft. h.
Throwing out long thorny as each stem branches like prolifera thorn, and in abundance.

No. 6140. Zygadenus breviBracteatus Hall
Hesperia. Sandy mesas.

No. 6141. ~~Hosackia~~ Lotus humistrata (Greene)
Sandy mesas.

No. 6142. Eriogonum mohavense
Sandy mesas.

No. 6143. ~~Gilia~~ Linanthus aurea (Nutt.) Greene
Cor. clear yellow. Cat. p. 177.

No. 6144. =Langloisia Gilia matthewsii Gray.
Very abundant on the desert this year. Noted all the way from Hesperia to Barstow. Well-developed and often forming low round mound-like plants 6 to 12 in diameter and ⅓ to ½ as high.

No. 6145. Lepidium fremontii Wats.
Abundantly in bloom and fruit this year, the plants 14 to 22 inches high.

Barstow

(primiveris Gray; not caespitosa Nutt.

No. 6146. Oenothera caespitosa Nutt. Petals clear yellow, obcordate. Stigmas slender, rotately spreading. Ovary 1/4 length of calyx-tube.

No. 6147. Verbena ciliata Benth. Goodingii Brig. sandy washes.

No. 6148. Lycium pallidum Miers. Leaves large and fleshy. Stems spreading or ascending. Berries large (5/8 to 5 lines diam.), globose, or a little depressed-globose, slightly yellowish, the seeds light-colored.

No. 6149. Gilia virgata Stand. var. Low or mound-like roundish plants.

— Camped last night some five miles northerly from Oro Grande. Went on today to Barstow, a long ride over country that is familiar as to vegetation.

S.B.

— Parish says: "If you go to La Jolla call on the Misses Scripps. They have commissioned Valentine to make paintings of the wild flowers of S. Calif. He has done at least 500 now. He is a very careful worker and the results are very accurate."

— Gilia aurea Nutt. no. 6143. Cont. from p. 175. Cor. lobes elliptic. Throat funnelform above the short tube. Throat orange-yellow above a black base, the tube whitish. Cor. clear yellow. Stamens inserted at sinuses of cor. at summit of throat.

- Castilleia plagiotoma gray. no. 6133 cont from p. 173.

Lower lip of calyx densely white woolly, cleft into 2 elliptic lobes, the upper lip 2/3 as long, cleft into 2 ovate acute lobes. Cor. very slender, the upper lip (galea) rather longer than the tube, the lower lip of 3 minute teeth. Bract truncate with 2 slender lateral lobes (1 on each side). The most striking part of this flower is the form and position of the woolly calyx

- Lotus no. 6115 cont from p. 170. Banner rather narrow, elliptic. Wings remarkable for being small and about 2/3 the length of keel petals! Keel shorter & than Banner. Calyx lobes subulate or lanceolate.

No. 6150. Eschscholtzia
Mesas at Barstow, 31 May
E. glyptosperma Greene.

-Parish says: Huatamote, is the spelling of the Baccharis
It is Indian, or at least there is no such Spanish name. Hence the corruption Water-weed". Manson says: "Water-weedy is another form and the one I have most commonly heard."

(Det. R.C. Barnaby, 1967)
Psorothamnus
No. 6151. ~~Dalea~~ polyadenius Torr.
2 to 3 ft. h. Banner roundish with a small but definite notch, slightly shorter than the wings which are narrow and with a similar small notch at apex, wings shorter than keel, the latter rather broad. Cor. violet, a pretty color against the soft grey of the leaves.

Barstow

—The country hereabouts, so filled with flowers when we left here four weeks ago, is now quite dry. The Abronia villosa flourishes on the sandy flats, its pink-lavender flowers forming a fine tone against the gray sand. They are most perfect where they grow. They cannot be gathered for home decoration nor will they make fine specimens pressed. The road between Cottonwood and Barstow has been cleared in such a way as to make a strip on each side the wagon path favorable to Abronia villosa, and for several

miles we had this defined band of color on each side of the roadway.

Forage Plants of the Trip.

– Pleuraphis rigida

This is a very fine forage plant, doubtless the finest in either the Mohave or Colorado deserts. It is rather abundant, often very abundant and widespread and so is a real resource. Desertmen often cut it for hay and desert travelers cut it where it is abundant to carry into areas where it does not grow. The spike stands upon a slender stalk something like a wheat head. Our horses were fond of it and thrived upon it. The plant is often found in heavy stools one to two (to three) feet in diameter at base

and forming a sort of dense clump of more or less woody stems 6 inches to a foot or 2 ft. high, from which clump rise the slender flowering stems. I noticed that cattle browsed down the clump until it became woody, that is until they reached the parts too woody. It was in a great wash half-way between Warrens Well and Twenty-nine Palms that we found it most abundant and highly developed. On the other hand it is often small, 8 to 12 inches high from a very small stool. Everywhere the desertmen and settlemen call this Gietta Grass. Cf. Erythea 3:148. Another

excellent forage grass is Sporobolus airoides. This is eaten by stock about Barstow where it is found in alkaline flats and forms heavy stools. I noticed it especially in the grove of Palms, the first canon east of Thousand Palms Canon, where it formed such heavy stools as to make the ground hummocky between and among the Palms. Our animals fed on it greedily here. It was the only forage at this point.

Distichlis spicata is a feed which cattle and horses eat greedily. There was a beautiful stand of it,

as fine as ever saw, in a young state, in Thousand Palms Canon and the animals fell upon it and ate steadily, paying little or no attention to other plants, a few of which might have been favored. Mansen says it has a strong tendency to bloat stock and that they grow thin feeding upon it. Coville in the Death Valley Report says that the grass was eaten freely because of the salty taste but the feed gave the animals no strength for hard work.
— Berkeley, June, 1914.

- Teratology. Orthocarpus floribundus. Instead of 3 sacs each corolla in half the fls. have 4 sacs! Berkeley, 1907.
- Trifolium barbigerum. Berkeley, 3 May 1890. E. L. Greene.
- Yerba del Golfo. See Sanford in letter file, 1908.
- Chu chu Pati. = Wyethia sp. See p. 202. See Sanford in file, 1908.
- "Bull-clover used by Indians as food" - Davy. = ? Trifolium tridentatum.
- Arctostaphylos. "Decoction of the leaves used by the Indians and by white ranchers with great success in cases of dysentery. The tea is exceedingly bitter and astringent." - J. B. Davy
- Artemisia vulgaris. Much used as poultices for relieving pain; used by women in childbirth - J. B. Davy.

- Purpus, Dr. cf. Miss Walker in litt. July, 1914.
- Fremont in S. Cal. - cf. Parish, Muhl. 4:57.
- "Panoche" of the settlers. Sugar made from an exudation on surface of a California sp. of reed - Am. J. Sci. Ser. 2, vol. 22, p. 6. See also Sugar of Sugar Pine.
- Pinite or Pine Sugar, sap of Pinus Lambertiana, as sweet as cane sugar, forms hard white crystalline nodules, very soluble in water, nearly insoluble in alcohol, not fermentable - Johnson, Cycl. 4:622.
- Tule. made into "neatly woven mats by the Indians of California - Am. J. Sci., ser. 2. vol. 22: p. 6. = Scirpus lacustris var. occidentalis.

- Rhododendron occidentale.
"On Del Norte coast at St. George Sound, on the plains outside the forest belt, grows a low pink-flowered Rhod. which looks different from the ordinary Rhod. occid. It is called by the children there, Red Honeysuckle. - Miss C.M. Hoak, Aug. 1, 1914.

— Miss Hoak asked what I desired from Los Angeles. Practically everything that grows there, said I. It is an interesting region. "That is the flora which Abram did up" said she. Then she added with a smile: It is the flora which did up Abrams. There are about 100 to 150 common things which we all know that are not in the book. It is maddening to us."

- Arctostaphylos viscida Parry, Rough & Ready, Nevada Co., Jepson, ovary glabrous.
A. mariposa Parry. Ovary, upper portion, densely covered with short glandular hairs. - Spms. by Carsdon from Mariposa.
— Trillium ovatum. In a coll. of plants from Miss Armstrong (Margaret) and marked "Big Trees". Later note = prob. Felton!!
- Norman E. Hoak. Took H.N. Bolander around to locate rare spms. when he first came to Mendocino Co. "He was a born naturalist altho' without college education" — Miss Charlotte Hoak, his daughter, July 31, 1914.

— Arctostaphylos. I have been having a high session with Miss Eastwood's species. They are not to be lightly thrown aside. One who knows them realizes that he is afraid to accept them or to reject them!.. A. glandulosa seems to me to be the best and will form the basis for a new-growing aggregate! A. manzanita Parry is hard to delimit. A. nevadensis Gray has nothing to rest on except its prostration (!!). It will one day be put into A. hookeri I think. "A. Santa Helenae" Eastwood is exactly my A. elegans, altho' its young rachises are canescent. My spms. are only mature ones. What a task we have here to straighten out & describe properly the forms, — only half-begun!! — W.L.J.

— Symphoricarpos. I have been trying to segregate our bal. material into the described species, rotundifolius, oreophilus, & longiflorus. I am satisfied there isn't any way by which flowering spms. of the first two can be distinguished. The leaves are the same shape, the pubescence is identical and the flowers are very uniform. Cf. Tangier-Smith's Tahoe spm. of rotundifolius (det. Hall) with Chesnut & Drew's Dana fork (S. oreophilus) They cannot be distinguished. Only the fruits serve to indicate the species. Therefore it is a question whether specimens which are alike so uniformly are not one species in spite of a slight variation in nutlet. Or compare the first-named spm. with Purpus 1835, Whitney Ck (det. as oreophilus by K. Brandegee) — exactly the same! The depth of lobing of calyx rim is nothing — deeply lobed or shallowly lobed may be found on spms. not otherwise different. I agree with Watson in Bot. King as for S. parishii, canescens, glauca, parvifolius, austinae — they are inexcusable.

Bay Farm Island.

No. 6152. Cordylanthus maritimus Nutt. Alameda marshes. Filaments slightly pubescent under a lens, the lower pair a little clavate-dilated at apex. Sepal slightly notched at apex.

Tetragonia expansa

Stamens 16; styles 5
" 16; styles 5
" 14; " 5

No. 6153. Gnaphalium
In Salicornia salt-marsh of Bay Farm Isld, where the deep cracks in soil are in summer time.

No. 6154. Plantago maritima L.
Alameda.

Alameda June 13, 1914

No. 6155 ~~Leptarrhena~~ Parapholis incurva (L.) C.F. Hubb. recurvata Trin.
Salicornia marsh, Bay Farm Isld.

– Excursion of Cal. Bot. Soc. this day to Bay Farm Isld. Several of us were discussing Chamaebatia foliolosa. One woman member complained of its stickiness, ruining dresses in walking thro' it. Mrs. Cunningham, I think, it was, said that in the central Sierras, (?about Summit), it is called Mountain Misery.

– Howell, Thos. J. Has an article in Pop. Sci. Mo. on N. Am. Floras. (Cf. Bot. Gaz. 8:285 for reference.)

– Eisen, Gustav, collaborator, U.S. Bur. Pl. Ind. (Foreign Seed and Plant Introduction) in 1914.

– Lemmon, Mrs. J. G., said to be mentally unbalanced at intervals and in charge of a care-taker acc. Mrs. Debar, June, 1914.

– Eriodictyon parryi greene. G.W. Purdy sends this from Hammond, s. Sierra Nevada. I count 29 ovules in one ovary. See his letter of July, 1914.

– Congdon, J.W. Coll. Leucothoe davisiae on Signal Peak, Mariposa Co., Sept. 16, 1883.

– It is remarkable how little field knowledge E.L. Greene has of the Sierra Nevada in view of his declamations about field knowledge. He seems to have been along the C.P.R.R. and at Calaveras Big Trees, but otherwise nothing. Cf Fl. Fr. 346, Caprifolium invol. "perchance reaching our borders" whereas it is common in the Sierra west slope. Similarly he knew nothing of the great areas of Prunus emarginata in the Sierras, etc, etc.

– Miss Alice King has been interviewing Mrs. Brandegee for material in regard to her magazine article on "What women have done in Botany". Mrs. B. told Miss K. that Miss Eastwood was no botanist!! Almost in the same breath she said that she (Mrs. B.) brought Miss E. to the Academy of Sciences in S.F. All this illustrates very well what Mrs. B. has done in Botany. – June 28, 1914.

– Miss Rowe, Bot. 104, of 2 or 3 years since, now teaching at Coalinga, says: "Orthocarpus purpurascens is called Bull Clover at Coalinga. It is also sometimes called Sheep's Tail. We have no buttercup at all and the people call Oenothera dentata by that name or, indeed, anything yellow!"

— Harford. cf. Melica harfordii.

Gambel, Wm. At Monterey in Oct. & Nov. 20. Cf. Journ. Phil. Acad. N.S. 1:35, etc. See also p. 218, 219, etc.

— Atriplex sp. ———. "Poultry mordinately fond of it. Covering this whole southern country. Told it was imported from Australia. Told it is winter food for meadow larks" — E. C. Keeler, Independent Sash & Door Co., State & Market sts., San Diego.

— Robt. P. Brandt says: "Ceanothus velutinus is called Greasewood in Mendocino County. I think the name exceedingly appropriate because I cannot imagine a plant having a more greasy appearance than is produced by the sticky upper surface of its leaves. In our country Silene

gallica is a weed in the hay fields and is called Tar weed." — Berkeley, 7 June, 1914.

— Davidson, Geo. Collected a few plants. Cf. one named for him by E. L. Greene. A heroic figure. Cf. sketch of life in Proc. Cal. Acad. ser. 4, vol. 4, p. 10.

— Calif. Collectors. Cf. Cotyledon caespitosa Haw. Misc. Nat. 180. (1803). This must have been near the first species published from California

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Spool No. 5. No. 1. Palms at Willis Settlement, general view. No. 2 Grounds Dr. Murray. Lemon, Date, Grevillea Olive, etc. 3 & 4. Ditto. Dr. Murray's old residence. No. 6. Mt. San Jacinto. Creosote & Franseria dumosa, White-ashy Eucalia Choya. No. 5. Near Cayon Pass. Desert side. Juniper. Quercus dumosa. Rabbit Brush no. ; Artemisia tridentata

No. 6. Mohave Rivers Cottonwood creosote & Mahogany fog.

Colorado Desert

Table of Distances.

Summit of Cottonwood Range:
To Piñon Mill 13 miles
" 29 Palms 12 miles
" Cottonwood Spr. 30 miles

Warren's Well to 29 Palms 27 mi.
" " to Shay's Well 6 "
Rabbit-Springs to Old Woman Sprs 27 "

Piñon Well to Indio, 28 mi.
Palm Springs to Whitewater, 11 mi.
" " " Banning, 25 "

– Cooper, Dr. J. G. Lycium cooperi, Gray, Proc. Am. Acad. 7: 388 – East Slope of Providence Mts. Audibertia capitata, Gray, l.c. 387, Summit of Providence Mts., May, 1861, Dr. J. G. Cooper.

Subjects for Students.

– Introduction of Brassica into California, its spread, economic status, habits, response to rains
– Carruthers Monotropa from Mendocino Co.

Camera Record. Spool No. 4. No. 1. Prosopis juliflora building a sand dune – single plant. No. 2 – Washingtonia filifera. No. 3. Straight line of them at head of wash canon east of no 2 No. 4. Unburned pair of Washingtonia flanked by Alder trees 45–50 ft. h. Nos. 5 & 6. Thousand Palm Canon, trees 40 to 55 ft h. No. 7. Ditto. No. 8. Do at upper grove. No 9. Burnt ones. No. Palms at Willis settlement.

Desert Expedition – Expense Rec.
Shoeing horses, camp stove. 4.15
Took horses Tuesday, May 5
Started on trip Fri. May 8.
Bale hay, Sack of barley from Miss Waterman.
Lamp chimney, Groceries. Nails.
Old Woman Sprs. horses $1.50. Bale Hay,
Indio $8.00. Cookies $.10. Oranges $.10. May 20 =
Oranges .15, Doughnuts 10; Bread .10. Eggs .15.
(Total .50) May 21. Hay 80. Parcel post .61

– Sequoia gigantea. Trees at Nevada City. planted by Dr. Miller. From Asst Prof. of Forestry Pratt.

– Chuchupate. "A plant of the Umbelliferae, indigenous to the Pacific Coast" – Velasquez, Dict. cf. p. 188 supra. It may be that the root was not Wyethia but Velaea or an ally. Sanford sent only the root, which came from Clayton.

– Camera Record Spool 2
No. 1. Grandfather Cactus, Ord Mt. 16:50. Creosote, Coleogyne ram. Yucca mohav. Pencil Cactus
No. 2. Creosote in full fl; Franseria Ephedra. Looking towards Rabbit Spr at left.
No. 3. Rabbit Spr.
No. 4 – Old Women Sprs.
No. 5. 2 miles S.E. of Shay's Windmill. Mesa with Eriogonum polifolium Yucca brevifolia, Narrow & Round-head Rabbit Brush, nos.; Lycium cooperi & andersoni; Choya; Bladder Sage; Coleogyne ramosissima, Yucca mohavensis
No. 6 – Palms at Twenty-nine Palms

Spool No. 3. Nos. 1 & 2 = Twenty-nine Palms
No. 3. Near Pleasant Val. Bladder Sage; Choya, Ephedra nev., Coleogyne ram, Creosote, Yucca mohav. & brevif. plants, Narrow-head Rabbit Brush small acacia greggii No. 4, Pleasant valley Cassia in full fl. & yucca brevif. No. 5. Pinon well grade – Pinus mon-

ophylla, Yucca brevif., Emplectocladus fascic., Juniperus no. ; No. 6. Prosopis juli.

Flora (see measurements on p. 131

Camera record. Spool 1.

- No 1. Draw s. of Daggett. Choya, Bladder Sage, Creosote on hills, Yucca on hills, Dalea no., Comp. with chaffy heads & linear leaves, Eucelia perennal;

No. 2. - Creosote on hill slope, Yucca in wash = Eucelia perennal, Comp. scarious heads, Desert Willow, Cassia armata

No. 9. Peak just west of Stoddard's well. Larrea chiefly, a little Yucca mohavensis, the short depressed globose yellow Comp. no ; Desert Aster ;

No. 10. Ditto. The globose-headed Comp. no . replacing the one prev. noted.

No. 10. Yucca mohavensis 10 ft. h.

Addresses.

- California Gold & Copper Mines, Von Trigger via Goffs, San Bernardino Co. Cal.
- Sexauer, 1512 De la Vina St., Santa Barbara.
- W. T. Waer, Lanfair. "If you will make arrangements with him, he will take you thro' this (Pinte Spr. Cañon)" - Miss Tennent.
  ? Pinte Gap
- D. M. Henderson, Ledge. "Will drive you to Giant Ledge mine". - Miss Tennent.
- Parish, ~~442~~ 772 D St., San Bernardino.
- Mr. Geo. Wilkes Willis, Daggett.
- Doc. Smith at Osborne's Camp. (Han
- W. F. Smith, Daggett

Indio

- Courtney, with Gard & Co. Grocers
- Carpenter, former U.C. student
- Bruce Hammond, U.S. Date Farm
- Wilson, Editor of Indio Date Palm.
- Northrup, Date Grower, Englishman

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– Pilostyles thurberi. Near Superstition Mt. Went to New River Ranch or Thompson Ranch, 8 mi. N.W. of Imperial, last ranch next to mesa on which mt. is located but many miles from it. From ranch house went due S. toward mesa, often reaching last ditch angled off toward N.W. over edge of mesa. About 1 mile from ranch house found a blue-fld. silky-white Dalea (reasonably sure it was a Dalea) & on it colonies of what I took to be Pilostyles thurberi. – J.C. Bridwell, in litt. 1914.

– Gaultheria Shallon. – "To Redondo Keeping on car to end of line at Cliffton, out on sea-cliffs for about one mile." – J.C. Bridwell, in litt. 1914.

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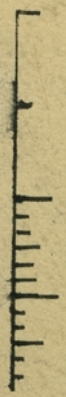
Camera Meter Blotter.